

HANDY MAN'S PLYWOOD PROJECTS

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HOW-TO BOOK

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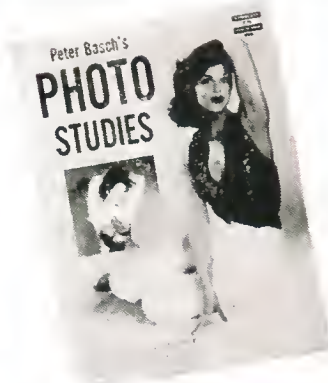
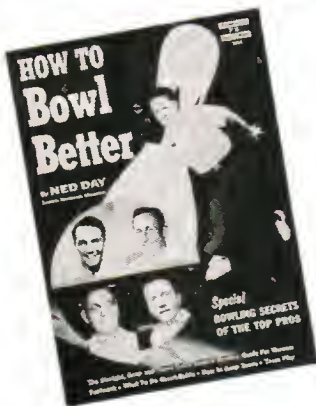
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Introduction

PLYWOOD is one of the wonders of the wood industry. It comes in many sizes and forms, is easy to work with, and does a million and one jobs well. This book explains why this is so, and provides you with many simple, easy-to-make projects which prove the versatility of plywood. First, read the special, detailed, easy-to-understand section on working with plywood. Then look through the many indoor and outdoor projects and start building. You will find that we have included everything from a lavish shoreside cabana to a simple magazine rack. All of the projects are inexpensive and easy-to-build. All of them will add to the beauty and comfort of your home.

Dan Blue Editor

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Douglas Fir Plywood Association

Mammoth 1957 Wholesale Tool Catalog

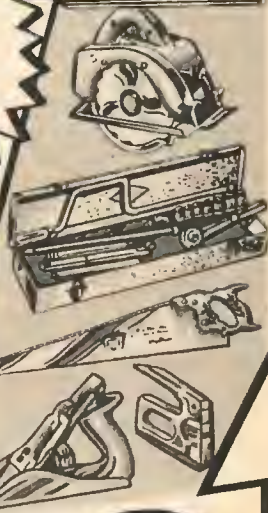
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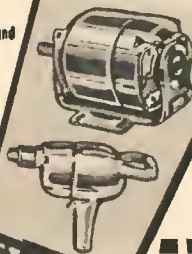
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all about plywood

Here are the basic facts about working with plywood

LIKE many other manufacturing giants, the plywood industry emerged from humble origins. It has come a long way since that summer in 1905 when a few hastily assembled display panels were made for the Lewis and Clark World's Fair Exposition in Portland, Oregon. Today you can buy plywood in five standard thicknesses, in several basic types and grades and faced with an ever-increasing array of highly attractive veneers, surfacing materials and textures.

The process that transforms giant trees into flat panels of uniform thickness is a fascinating one. After felling, the trees are cut into peeler logs. The bark is removed and the peeler block is ready to be sliced. As the block revolves against a huge knife, a continuous ribbon of wood as wide as the block runs off into 150-foot storage trays. Meanwhile, defective portions are being cut out and the veneer is being cut into usable sizes for plywood. The veneer is now graded, dried, regraded and stacked.

It is then ready for the glue spreader.

Center plies are run through rollers which apply glue evenly to both surfaces. These plies are in turn assembled with alternate dry plies to form 3-, 5-, or 7-ply panels. At all times the grain of a ply is run counter to the plies adjacent to it. This crossgrain construction makes fir plywood strong and rigid. Panels are then placed in the hot press where they are glued up to exact thicknesses. They are then trimmed, sanded and graded to conform with very specific standards set by the plywood industry itself.

Aside from its strength, there are other advantages to using plywood: it is split-proof; there is no shrinkage, since it comes to you dry; it is easily worked, holding screws and nails well and gluing well; and it takes a variety of finishes. In addition, plywood is available in various thicknesses to suit the job at hand. Standard panels are 4x8 ft., although extra-long units are available for boat hulls, siding, and so on. These

Mahogany



Gum



Walnut



Maple



Birch



Fir



Oak



Korina



come in 14-, 16-, and 20-ft. lengths, and must usually be ordered in advance from your lumber dealer. For the craftsman whose needs may be less than a 4x8 panel, many hardware stores now carry display racks of Handy Panels which come in 2x4-ft. and smaller sheets.

Fir plywood comes in two types: exterior and interior. Exterior-type plywood is completely waterproof. The glue, or bond, is stronger and more durable than the wood itself. It cannot be weakened by time, weather or even boiling water. Obviously, therefore, exterior-type plywood is ideally suited for the construction of boats, outdoor furniture, carports, signs, farm structures, heavy-duty concrete forms—in short, for any application in which the finished object must be ruggedly durable and completely waterproof.

Interior-type plywood is made with highly moisture-resistant glue. These panels will withstand occasional wetting during construction, but should never be

HEAVY ROLLERS apply glue evenly to both sides of the center veneers used in plywood panels.



permanently exposed. Interior plywood is therefore used for cabinet doors, built-ins and other furniture.

Precisely because there are so many uses for fir plywood, these two basic types, interior and exterior, are themselves broken down into grades. For example, if you were building a room divider or any other unit in which a panel would be visible from either side, you would, of course, want to use plywood that had good veneers on both sides. But let's assume you were going to panel a wall. Why should you pay for a good back veneer that's going to be completely hidden from view?

To anticipate every building need, therefore, fir veneers are graded alphabetically from A to D. These grades are explained in the first set of charts. Each grade has very definite and stringent specifications that characterize it, and the entire fir plywood industry maintains a rigid quality control program centered on grade trademarks owned by the Douglas Fir Plywood Association. It becomes evident that there

VENEER QUALITIES

A

Presents smooth surface. Free from knots, open splits, pitch-pockets and other open defects.

Veneer shall be well joined if more than one piece is used.

Admits discoloration, sapwood and pitch streaks, overaging not more than 3/8" width and blending with color of wood.

Admits maximum of 18 veneer patches in 4' x 8' sheet.

Admits shims and neatly made panel patches.

Shims may not be used over or around any type of patch and multiple repairs must be limited to TWO patches.

All patches and repairs to run parallel to the grain.

Admits approved plastic filler in splits and other minor defects up to 1/32" in width; in small splits or openings up to 1/16" in width if not more than 2" long; in small chipped areas or openings not to exceed 1/8" wide by 1/4" long.

B

Presents solid surface. Free from open defects except splits not wider than 1/32".

Vertical ambrosia beetle borer holes permitted if not exceeding 1/16" in diameter and averaging not more than 1 per sq. ft.; and also horizontal tunnels 1/16" across, 1" length, 12 in number in 4' x 8' panel, or proportionately in other dimensions.

C

For Underlayment grade only. Tight knots up to 1 1/2" in greatest dimension and worm and borer holes or other open defects not to exceed 1/4" and 1/2" allowed.

Splits—not to exceed 1/16" wide allowed.

Solid, tight pitch-pockets, ruptured and torn grain, minor sanding defects and sander skips up to 5% of panel area admitted.

C

Knotholes—1" in least dimension. Pitch-pockets—not wider than 1". Splits—3/16" (must taper to point).

Warm or borer holes 5/8" x 1 1/2".

Tight knots—1 1/2".

Plugs, patches, shims and minor sanding defects admitted.

D

D veneer used only in interior-type plywood.

Knotholes—2 1/2". Pitch-pockets—2" x 4".

Splits, widths at widest point—

1/2" up to quarter panel length.

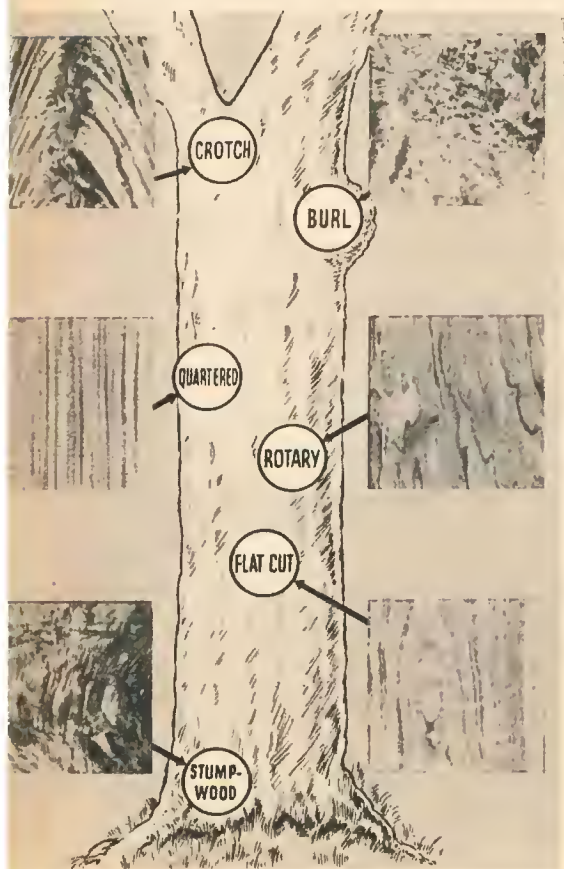
1/4" up to half panel length.

3/16" up to full panel length.





All must taper to point.

Plugs, patches, shims, worm or borer holes and minor sanding defects admitted.





PART OF tree from which veneer is cut and the way the cut is made determines grain pattern. Imaginary tree by Hardwood Plywood Institute helps to identify various plywood patterns.



EXTERIOR PLYWOOD 100% WATERPROOF GLUE FOR OUTDOOR USE

GRADE-TRADEMARK	TYPICAL USES	Veneer Quality*			Standard Stock Sizes†							
		FACE	BACK	INNER PLYS	Width Ft.	Lgh. Ft.	THICKNESS (Inches) ‡					
							¼	⅜	½	¾	1	
① EXT-DFPA-A-A	Use where appearance of both sides is important. Fences, carport enclosures, signs, boats, etc.	A	A	C	4	8	x		x	x	x	x
① EXT-DFPA-A-B	Alternate for A-A grade where appearance of one side is less important.	A	B	C	4	8	x		x	x	x	x
EXT-DFPA PLYSHIELD 	"One side" grade for siding, soffits, fences, store fronts.	A	C	C	4	8	x		x	x	x	x
① EXT-DFPA-UTILITY-B-C	Utility outdoor building panel. Farm buildings, etc.	B	C	C	4	8	x		x	x	x	x
EXT-DFPA-UNDERLAYMENT 	Base for tile, linoleum, etc., where unusual moisture conditions exist.	C (Rep'd)	C	C	4	8	x		x	x	x	x
EXT-DFPA-SHEATHING-C-C 	Unsanded construction panel with waterproof bond.	C	C	C	4	8		x	x	x	x	x
EXT-DFPA PLYFORM 	Concrete form grade, maximum re-use. Can be re-used until wood is literally worn away. Edge sealed with distinctive red sealer. Mill oiled unless otherwise specified.	B	B	C	4	8					x	x

INTERIOR PLYWOOD MOISTURE-RESISTANT GLUE FOR INDOOR USE

GRADE-TRADEMARK	TYPICAL USES	Veneer Quality*			Standard Stock Sizes†							
		FACE	BACK	INNER PLYS	Width Ft.	Lgh. Ft.	THICKNESS (Inches) ‡					
							¼	⅜	½	¾	1	
① INTERIOR-A-A-DFPA	Use indoors where both sides to be in view. Cabinet doors, built-ins, furniture.	A	A	D	3-4	8	x		x	x	x	x
① INTERIOR-A-B-DFPA	Alternate for A-A. For uses requiring one surface highest appearance, opposite side solid and smooth.	A	B	D	3-4	8	x		x	x	x	x
PLYPANEL 	"One-side" grade for interior use. Paneling, built-ins, backing and underlayment.	A	D	D	3-4	8	x		x	x	x	x
① INTERIOR-B-D-DFPA	Utility panel for uses requiring one smooth, solid side. Backing, cabinet sides, etc.	B	D	D	4	8	x		x	x	x	x
PLYBASE 	Underlayment grade. Base for tile, linoleum, carpeting.	C (Rep'd)	D	C§ D	4	8	x		x	x	x	x
PLYSKORD 	Unsanded sheathing or structural grade. For sheathing, subflooring, etc., barricades.	C	D	D	4	8		x	x	x	x	x
INTERIOR PLYFORM 	Re-usable concrete form plywood. Edge sealed with distinctive green sealer. Mill oiled unless otherwise specified.	B	B	C	4	8					x	x

*All grades sanded both sides except EXT-DFPA Sheathings and Interior PlySkord.

†OTHER SIZES than those shown in tables are standard but not normally stocked. About three quarters of all fir plywood comes in 4'x8' sheets; ¼" to ¾" thicknesses are most popular. King-size panels (12', 14', 16', 20' and longer) are also available.

‡Panels ¾" and thinner, have minimum of 3 plys; ½" to ¾" inclusive are 5-ply minimum; thicker panels have 7-ply minimum.

§Veneer next to face is C or better.

GLUE CHART

TYPE	DESCRIPTION	USE	LIMITATION	HOW TO USE IT
HIDE GLUE	Comes in flakes to be heated in water, or in liquid form; very strong.	Excellent for all furniture; it even gives strength to joints that do not fit very well.	Not waterproof; do not use for outdoor furniture or anything exposed to dampness or weather.	Apply in warm room to both surfaces; allow to become tacky before joining; clamp 3 hours.
UREA RESIN GLUE	Comes as powder to be mixed with water and used within 4 hours; very strong.	Good for general wood gluing; first choice for work that must stand some exposure to dampness; highly water resistant.	Needs well-fitted joints, tight clamping; should be applied at room temperature of 70° or more.	Make sure joints are tight; mix and apply thin coat; allow 16 hours drying time.
LIQUID RESIN GLUE	Ready to use at room temperature; clean-working and quick-setting; strong enough for most work, but not quite as tough as hide glue.	Good for indoor furniture and cabinetwork; first choice for small jobs where tight clamping or good fit may be difficult.	Not sufficiently resistant to moisture for outdoor furniture or outdoor storage units.	Use at any temperature, but preferably above 60°; spread on both surfaces; clamp at once; sets in 1½ hours.
RESORCINOL GLUE	Comes as powder to be mixed with water; dark colored; very strong; completely waterproof.	This is the glue to use with exterior-type plywood for work to be exposed to extreme dampness.	Expensive; dark color makes it unsuitable for jobs where waterproof glue is not required.	Work at temperature above 70°; use within 8 hours after mixing; apply thin coat to both surfaces; allow 16 hours drying time.

Information courtesy of Douglas Fir Plywood Assn.

PRE-FINISHED plywood wall panels are easily installed with hidden clips, really dress up a room.

STRIATED SQUARES, put up at right angles to one another, create interesting checkerboard effect.



is a plywood veneer—and a combination of veneers—for every purpose. Making a boat hull? Then you want exterior-type A-A plywood (waterproof glue, grade A face, grade A back). Building a desk top for the den? Interior-type A-B will suffice. Need exterior sheathing for that new room addition? Use exterior C-C because this unsanded construction panel with a waterproof glue will not even be visible. These are only a few of the combinations possible.

Although fir is the best-known plywood veneer, even this familiar standby has undergone some startling face-lifting to make it unusually attractive. Here are a few typical ones:

Plyweave, a plywood with a fabric-like texture, is available in full-size panels and in the five standard thicknesses. It may be finished in several attractive ways.

Shadowwood is a plywood in which the surface softwood has been wire-brushed away, leaving the hard, swirling growth patterns in a dramatic relief pattern. *Sea Swirl* and *Surfwood* are similar products; the latter permits open and sound knots that add to the natural appearance of paneling.

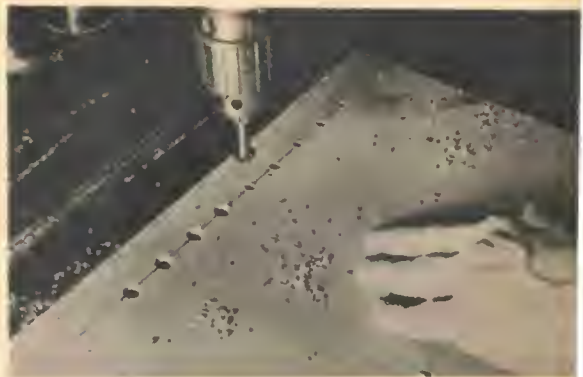
Weldtex is a striated plywood, cut with deep grooves that lend an interesting textured finish of parallel, random-width lines running the length of each panel. These

TEXTURE ONE-ELEVEN is a waterproof plywood paneling with ship-lapped edges, used as a siding.



WHEN BORING through a piece of plywood, place scrap wood behind it to avoid ripping the veneer.

RESIN-IMPREGNATED fiber surfaces of overlaid plywood keep wood from splintering, as shown.



OVERLAID fir plywood is an exterior type plywood. Its smooth surface is a fine base for paint job.





IT'S EASY to cut dados with a power saw or a router and make neat, sturdy, tight-fitting shelves.



IN CAREFUL WORK, where nails are close to an edge, it is always best to pre-drill the holes.

FLUSH CLAMP produces strongly glued joint; an uneven pressure (right) makes a poor joint.

TO FINISH an edge, you can cut a V-groove and then glue in a matching strip of wood, as shown.



grooves break up the flat surface and create unusual highlights and shadows. (Weldtex patterns are available not only in fir, but also in Philippine mahogany and gum.)

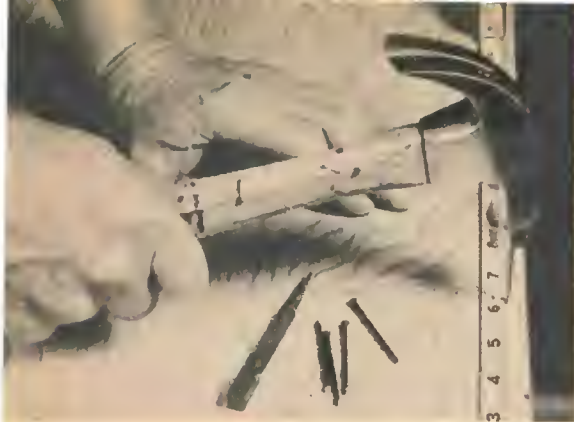
Texture One-Eleven is an exterior-type fir plywood with deep parallel grooves cut in the face to create a rhythmic stylized design effect. Panels are available in either 8- or 10-ft. lengths of 16- and 32-in. widths. Full-sized panels, 48-in. wide, may also be ordered. On the narrower panels, the grooves are 2-in. apart; on the wider ones, 4-in. The long edges of the panels are shiplapped so that no special vertical joint treatment is needed.

In addition to these unusual textural treatments, fir plywood is widely used as the backbone for various facing materials.

Overlaid plywood, made by several manufacturers, is an exterior-type base panel, to which has been bonded a smooth resin-impregnated fiber coating. This gives the plywood a smooth, check-free surface that's easy to paint and to keep clean. Overlaid plywood is recommended for many interior or exterior installations: siding, built-ins, partitions, gable ends, outdoor furniture, and so on.

There is also *Armorply* (plywood bonded to metal), *Porc-Lin-Ply* (Weatherproof, porcelain-faced panels), plywood faced with *Micarta* and *Formica* and even one plywood-based product that's used for blackboards.

Novoply is a three-ply board consisting of a dense outer surface of specially prepared wood veneer flakes, a lower density



NAILS SHOULD be spaced about six inches apart, closer in thin plywood which might buckle.

LIGHT PRESSURE adheres matching Woodtape to edge, warm iron bonds Woodtape permanently.



core of medium-sized chips, and another high-density layer of flakes. The flakes and chips (California redwood and mixtures of pine and fir are currently utilized) are resin-coated and impregnated and the three plies are simultaneously fused under heat and pressure. Since Novoply has no wood grain direction, it is very flat and practically free from warp. Therefore, aside from its wide use in sliding and other door construction, it is finding extensive application as a backing material for plastic laminates like those named above and for hardwood-veneered plywood panels.

Hardwood Plywood: No one will dispute the usefulness, in fact the indispensability, of fir plywood. This material has more than proved its worth in economy, effi-

ciency, and speed of application. But it's when you become acquainted with the hardwood plywoods that you really appreciate plywood construction. Just about every veneer can be had—from rich, golden native oak to dark, glistening rosewood imported from South America. Many craftsmen are probably unaware that more than 85 per cent of all wooden furniture in this country is made of hardwood plywood. Take a close look at your TV console, or at that new headboard your wife is so proud of. Chances are it's hardwood plywood of one kind or another.

Hardwood plywood has wrought a revolution in the nation's living rooms by making available pre-finished, easy-to-install panels of mahogany, birch, oak, walnut and other facings at surprisingly low cost.

Like fir plywood, the hardwood varieties are composed of cross-laminated slices of genuine wood. But along with the familiar laminated or veneer core material, hardwood plywood also comes in what is called lumber core. The center composition of a plywood panel, regardless of its type, is called a core. On 5- and 7-ply panels, the plies adjacent to the insides of the faces and the core are called crossbands. Hardwood plywood may be made either entirely of veneer or of veneer bonded to a solid core. The latter is composed of narrow strips of solid wood which are edge-glued

PLYWOOD SCREW CHART

Plywood Thickness	Minimum Screw	Pilot Hole
3/4"	No. 8, 1-1/2"	5/32"
5/8"	No. 8, 1-1/4"	5/32"
1/2"	No. 6, 1-1/4"	1/8"
3/8"	No. 6, 1-1/4"	1/8"
1/4"	No. 4, 3/4"	7/64"

PLYWOOD NAIL CHART

Plywood Thickness	Recommended Nails
3/4"	6d casing or 6d finishing
5/8"	6d or 8d finishing
1/2"	4d or 6d finishing
3/8"	3d or 4d finishing
1/4"	3/4" or 1" brads; 3d finishing; 1" blue lath nails

FINISHING TECHNIQUES FOR FIR PLYWOOD

Effect Desired	Materials	Procedure
A. PANELS		
Blond (Interior)	<ol style="list-style-type: none"> 1. White Firzite 2. Satinloc or other clear finish 3. Poste wax 4. 000 and finer sandpaper 5. 00 steel wool 	Sand the wood thoroughly; apply a coat of white Firzite thinned about 20% with turpentine or mineral spirits and let set a few minutes; wipe off thoroughly with cloth and allow 24 hours drying time; apply a coat of clear finish and allow recommended drying time; rub down with steel wool and dust off; apply a second coat of clear finish, let dry, rub with steel wool, dust off and wax.
Stain (Interior)	<ol style="list-style-type: none"> 1. Clear Firzite 2. Oil stain 3. White shellac 4. Wax or varnish 5. 000 and finer sandpaper 6. 00 steel wool 	Sand the wood thoroughly; apply a coat of clear Firzite and let dry overnight; sand again, apply oil stain and let dry; apply thin coat of fresh white shellac and let dry; sand or rub with steel wool, dust off and wax. (For a varnish finish, apply a coat of dull or gloss varnish over the shellac.)
Enamel (Interior)	<ol style="list-style-type: none"> 1. White Firzite 2. Enamel undercoat 3. Flat, eggshell or gloss enamel 4. 000 and finer sandpaper 	Sand the wood thoroughly; apply a coat of white Firzite and let dry overnight; sand thoroughly and apply a coat of high-quality enamel undercoat; sandpaper when dry and finish with 1 or 2 coats of enamel.
Varnish or shellac and wax finish	<ol style="list-style-type: none"> 1. Clear Firzite 2. White Shelloc 3. Wax or varnish 4. 000 and finer sandpaper 	Sand the wood thoroughly; apply a coat of clear Firzite and let dry overnight; sand thoroughly and apply a thin coat of fresh white shelloc; sand when dry and finish with wax or varnish.
Paint (Exterior)	<ol style="list-style-type: none"> 1. Clear Firzite 2. House paint primer 3. Exterior house paint 4. Sandpaper 	Apply a coat of clear Firzite and dry thoroughly (at least overnight in good drying weather); sand thoroughly and apply good-quality exterior house paint primer and paint.

together. This type of hardwood plywood is generally employed for construction of furniture, built-ins and when edge treatment of the wood is desired. Lumber core material is easier to edge-treat than veneer core because, when it is ripped, the longitudinal grain of the core is evident and is easy to blend into a finish that will match the facing veneer.

Since hardwood plywood is used for projects where appearance is highly important, a stringent grading system has been evolved by the Hardwood Plywood Institute in consultation and agreement with major producers and distributors.

Custom Grade: Includes special selections and types produced by individual mills. Architectural plywoods, technical types and matched grain panels for special uses are included in this category.

Good Grade (1): The face is made up of tight, smoothly cut veneer containing the natural character marking inherent in the species. If made of more than one piece, veneers are matched at the joints to avoid sharp contrasts in coloration and grain. Knots (other than pin knots), worm holes, splits and other forms of decay are not permitted.

Sound Grade (2): The face is free of open defects to provide a sound, smooth surface. Veneers are not matched for grain or color. It may contain mineral streaks, stain, discoloration, patches, sapwood, sound tight knots up to $\frac{3}{4}$ -in. average diameter, sound smooth burls up to 1-in. average diameter. Rough-cut veneer and splits are not permitted.

Utility Grade (3): All the above defects are permitted, including splits or open

FINISHING TECHNIQUES FOR FIR PLYWOOD

Effect Desired	Materials	Procedure
B. STRIATED PLYWOOD		
Light Natural	<ol style="list-style-type: none"> 1. Satinlac or other clear finish 2. Paste wax 	Apply a coat of Satinlac or other clear finish and let dry; rub with steel wool, then dust off; apply a second coat and let dry; rub with steel wool, dust off and wax.
Blond with contrasted grooves	<ol style="list-style-type: none"> 1. Clear Firzite 2. White Firzite 3. Satinlac or other clear finish 4. Paste wax 5. 00 steel wool 	Seal the wood with clear Firzite and let dry overnight; steel-wool lightly and dust off; apply a coat of white Firzite thinned about 20% with turpentine or mineral spirits; wipe off in 3 to 5 minutes, allowing same to remain in the grooves; dry for 24 hours; sand ridges lightly and dust off; apply a coat of clear finish and let dry; steel-wool lightly, dust off and wax.
Solid painted with contrasted grooves	<ol style="list-style-type: none"> 1. Flat wall paint 2. White Firzite 3. Pale dull varnish 4. Steel wool 	Apply a coat of paint thinned about 20% with clear Firzite and let dry 24 hours; steel-wool lightly and dust off; apply a coat of white Firzite thinned about 20% with turpentine or mineral spirits and wipe off lightly, allowing same to remain in the grooves; let dry overnight and complete with a coat of pale dull varnish thinned about 10% with turpentine.
C. SIDING AND EXTERIOR STRIATED PANELS		
Solid Painted	<ol style="list-style-type: none"> 1. Clear Firzite 2. House paint 3. Brass wire brush 	Apply a coat of clear Firzite and let dry overnight; brush lightly and dust off; apply two coats of paint.
Natural	<ol style="list-style-type: none"> 1. Clear Firzite 2. Pale spar varnish 3. Brass wire brush 	Apply a coat of clear Firzite and let dry overnight; brush lightly and dust off; finish with two coats of pale spar varnish.

Courtesy United States Plywood Corp.

joints not exceeding $\frac{3}{16}$ in. and not exceeding half the length of the panel, cross breaks to a length not greater than that of the permissible knotholes, and small areas of rough grain are permitted. Several types of decay are not permitted.

Backing Grade (4): Veneer is unselected for grain or color. Knotholes no larger than 2-in. maximum diameter and no groups of knotholes in any 12-in. square exceeding 4-in. diameter and splits no wider than 1 in. are admitted. Other defects are permitted in this least expensive grade—provided they do not seriously impair the strength or serviceability of the panel. Incidentally, it is often among the less expensive grade that you will find the most interesting and dramatic grain patterns.

Dimensions and Types: Veneer core con-

NOTE how a clear finish like Satinlac accentuates and heightens the grain of mahogany paneling.



struction panels in 3-, 5-, 7- and 9-ply are generally available in these thicknesses:

3-ply	— $\frac{1}{8}$ "	$\frac{3}{16}$ "	$\frac{1}{4}$ "
5-ply	— $\frac{5}{16}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "
5- & 7-ply	— $\frac{3}{8}$ "		
7- & 9-ply	— $\frac{3}{4}$ "		

Unlike fir plywood, which comes in two basic types, hardwood plywood is available in three: Type 1 is a fully waterproof bond. Type 2 is water-resistant bond. Type 3 is dry bond, suitable for use where it will not be subjected to water, dampness or high humidity. In addition, technical and marine hardwood plywoods are made from veneers to fit specific applications.

Veneers and Cuts: Since the hardwood plywoods are used primarily for fine furniture, paneling, and other applications in which the surface will be in full view, special effort is made to obtain especially handsome veneers. Unlike most fir plywood, which is rotary cut and consequently has a rather wild grain, a good deal of hardwood veneer is plain-cut, flat-cut or quartered. This means that the veneer is not peeled off the log like paper towels off a roll. Instead, the log is carefully cut longitudinally into flitches of various shapes and sizes. The veneer is then sliced from flat surfaces of the flitch or from an arc of the tree, rather than from its entire circumference. The result is that the veneer more closely resembles a natural grain. The tree itself is also carefully considered to take advantage of burl growths and branch crotches.

Layout: One of the most evident advantages of using plywood for furniture projects is that a single panel can be subdivided into smaller, though sizable, pieces that offer continuous grain patterns and uniform thickness without the trouble of jointing, gluing, planing and sanding individual boards. But before you begin cutting your full-size sheet, spend some time laying out exactly where your cuts will be. Pay attention to grain; wherever possible, have it run the long way of your unit. You'd be surprised how much time and material you'll save if you scale out the best cutting arrangement on a piece of paper. Be sure to allow for the thickness of your saw blade between adjacent pieces.

Cutting: In all likelihood, one veneer face will be better than the other. Your job, at this stage, is to continue to protect this good surface that you have chosen and stored with such care. If your cutting tool is a hand saw and your project will necessitate many cuts, your best bet is to look for

a lumberyard that has a radial or table saw large enough to make the major cuts. In fact, this is advisable even if you have a power saw. You gain two important advantages: (1) much less storage space will be required for two or three pieces than for the whole panel; (2) the remaining pieces are more easily workable with the tools in your own shop.

If you use a circular saw or a hand saw, cut your plywood with the good face up. If you have one of the increasingly popular portable power saws, cut with the good face down. With a radial saw, the good veneer should be up for crosscutting, mitering and similar operations. However, it should face down when you rip, because the blade's position to the work is reversed when you swivel the yoke from the cross-cut to the rip position. With any power saw, use a sharp combination blade or a fine-tooth blade without too much set. Let the blade protrude above your material just the height of the teeth.

Boring: When making holes $\frac{1}{4}$ in. or larger, never permit your drill to penetrate all the way through a piece of plywood. This results in a badly splintered hole. Instead, back up your work with a block of scrap; turn your brace slowly, and stop as soon as the drill point becomes visible on the underside. Then reverse your work, start the drill through the small hole already begun and bore until the hole is completed. With a drill press you can make even larger holes in a single operation by clamping the work tightly over a piece of scrap. Be sure to set your depth gauge so that your bit or circle cutter penetrates at least $\frac{1}{8}$ in. into the scrap.

Use of Joints

Joints: All the joints commonly used with stock lumber are also employed with plywood, plus a few specialized ones. The common butt joint is the simplest, of course, for forming corners. With $\frac{3}{4}$ -in. plywood, simply place one piece against the other at right angles and attach them. For thinner work, use a nailing block on the inside of the joint to provide additional strength. In both instances, glue will greatly increase the strength of the joints. Dadoes and rabbets are, of course, easy to make with power tools and are widely used by craftsmen who work with plywood.

In addition to these standard joints, there are several unique corner treatments whose function is to hide or to reduce the exposure of laminated edges. While a standard rabbet joint will leave about half of the top member exposed on the side, this

exposure can be lessened by cutting deeper into the top so that only $\frac{1}{4}$ in., or even less, remains. Cut the rabbet wider, too, so that the excess can be sanded flush with the side members. Top and sides may then be jointed with glue blocks and screws.

Another method involves mitering the corners of the top and side members of a unit, cutting grooves along the miters and assembling the components with splines and glue. This produces a very handsome effect, especially if the top and side members are cut from the same panel and have a continuous grain pattern. The exposed front edges may then be covered by one of the several methods which are discussed in the section on edging.

Fasteners: The best fasteners you can use with plywood are flathead wood screws. Shown in a chart are the five standard thicknesses of plywood and the minimum-sized screws that should be used with each. Use longer screws where work permits. Never attempt to put a screw into a piece of plywood without boring a pilot hole first. It's wise to countersink your holes so that the screw heads can be driven below the surface of the wood. This simplifies finishing, too, because you can fill the countersink recess with composition wood filler.

When less holding power is required, nails may be used. Pre-boring pilot holes is recommended if you're nailing close to an edge; otherwise you're liable to splinter or chip the veneer. Nails should be spaced about 6 in. apart in plywood $\frac{1}{4}$ in. thick or more.

Gluing: Plywood may, of course, be glued like any other wood. Since there are many types of glue now on the market, consult the glue chart for the variety that best suits your needs. Before applying any glue, be sure that your pieces fit well and are free of dust.

Glue is best applied with a stick or brush. Since end grain absorbs glue rather quickly, apply a preliminary coat, allow it to soak in for a few minutes and then apply your second coat before joining the parts. Tighten all joints firmly with clamps or with improvised weights (sandbags, books, etc.) and always protect your work by placing pieces of scrap under the jaws of your clamps. Wipe off all excess glue while it is still pliable, for if it is permitted to harden on the surface, it may stain your wood and prevent a uniformly attractive finish. Allow glue to set for as long as its manufacturer directs. Even if a joint seems tight after a shorter time than is recommended, do not remove the clamps.



PLYWOODS can be used on sea as well as land, eliminate caulking of seams, speed building job.



KITCHEN UNIT is covered with high-density overlaid fir plywood, which has hard, durable surface.

Planing and Smoothing: Planing plywood edges with a hand plane or a power jointer is unnecessary if you have cut your piece with a sharp blade. However, it will sometimes happen that you will have to trim an edge with a hand plane. Work from both ends of your working edge toward the center to avoid tearing out plies at the edges. Use a plane with a sharp blade and take very shallow cuts. Likewise, if you're trimming a plywood edge with a jointer, do not run the work straight through. Instead, feed the piece about half way through, reverse it and complete the pass from the opposite end.

If you have made good cuts with your saw or jointer, your plywood will have rather sharp edges. On shelf fronts or other inside edges that are likely to be touched, it's wise to break these sharp edges with a wood file or sandpaper.

Edging: Several furniture manufacturers make no attempt to hide a plywood edge and will leave a highly polished laminated edge completely exposed. This is partially due to a feeling among designers that materials should be used honestly; that is, plywood is plywood and should not be disguised as something else. However, it is often necessary to hide an edge that would be unattractive otherwise and several handy techniques may be used by the home craftsman.

If you have power tools, there are some ingenious methods at your disposal. With the appropriate cutting head on your saw arbor, you can cut a V groove along the edge of your plywood and glue in a matching strip of stock. The same effect can be achieved more easily by simply butt-gluing a strip of stock from 1/4 to 1 in. thick to the edge. For added strength, use a few finishing nails or brads. A refinement of this technique is to cut a 1/4-in. groove along the entire length of the center of your edge, then insert a tongue strip of stock. The edges of your strip may be slightly rounded. If you have a shaper or heads for your saw arbor, you can minimize the laminated look of a plywood edge by cutting a beaded surface along it.

But it's also possible to do a good edging job without power tools, thanks to strips of veneer now on the market. These are exactly 3/4 in. wide and come in both strips or rolls, depending on the manufacturer. They are available in mahogany, birch, walnut, oak and other woods. Then there are plastic surfaces like Micarta or Formica which can be applied to the edges of tables with special cement. Extruded edging material of steel or aluminum is also avail-

able. However, the simplest way of hiding plywood end grain is to paint it. To insure a perfect job, it should be filled. Use wood composition filler or plaster spackling, sand smooth when dry and finish as desired.

Too often even the skilled woodworker will rush through the finishing process as if he were unaware that the care he brings to this final operation will determine the actual appearance of his project. Impatience has ruined more projects than carelessness, so take your time.

The first step is to prepare your surface. This means sealing all nail holes, counter-sinks and defects with composition wood filler. Since some commercial fillers have a tendency to shrink when they dry, apply fillers so that they form a small mound over the depression. When dry, sand flush.

Make sure your unit is as free of dust as you can get it. If you're building an enclosed piece like a cabinet or chest, go over all surfaces and especially the inside area with a vacuum cleaner. Clean all edges, too, like tops of doors. The vacuum is especially useful to remove grit, dust and kinks after you sand or steel-wool between coats.

If you are using a finish with which you are unfamiliar, test it on a scrap of the same plywood in your project or on an area that will not be visible. Let your stains and finishes dry completely before you decide to use or discard them.

Finishing Problems

Fir: The finishing of fir plywood and other soft woods with pronounced soft spring and hard summer growths has presented some special problems. A product developed by the United States Plywood Corporation makes possible a satisfactory painted or finished job on these woods. Known as Firzite, this product helps solve (1) grain rise, (2) hairline checking in painted jobs and (3) a wild grain appearance on stained work. Firzite penetrates deeply and in effect brings the soft growth to approximately the same uniform density as the hard summer growth. It holds the grain of the wood in a tight grip that largely stops its movement, thus reducing the possibility of face-checking or grain-rising on painted or enameled jobs.

Firzite comes in two types: clear and white. The clear is recommended as a pre-sealer for stain jobs to control the vastly different penetrations of stain on hard and soft growths. It may also be used on any soft wood as a pre-sealer prior to painting to eliminate face-checking and wild grain.

For painted work, white Firzite is recommended. This is a pigmented variety which, in addition to sealing the wood pores, serves as an undercoat over which a minimum number of coats is required. White Firzite is also adapted to secure "blond" or "pickled" effects. It may also be tinted with colors-in-oil to obtain any light pastel shade desired.

In addition, the United States Plywood Corporation has developed a product called Satinlac, a light natural finish which produces a soft effect and which wears well. Satinlac is water-clear in color and will not yellow or darken with age. It may be brushed or sprayed and is recommended for interior use only. Finishing procedures for various types of fir plywoods are indicated in a chart.

Hardwood Plywoods: To utilize the full beauty of the hardwood veneers, one of several finishing techniques may be used.

Clear Natural: Apply a prime coat of sealer or a thin coat of white shellac mixed with an equal portion of denatured alcohol. When dry, rub with No. 00 steel wool or 00 sandpaper. Apply a second coat of clear sealer or varnish. An alternate method to obtain a lighter appearance is as follows: After the first application of sealer or shellac, apply a coat of white pigmented sealer, like white Firzite, covering an area of not more than 30 square feet, allow it to set for two or three minutes and wipe off to the desired tone. In spots where wood is darker, allow more pigmented sealer to remain. Thus a general color tone is held uniform. After allowing the second coat to dry 24 hours, rub with steel wool or fine sandpaper.

Apply your third coat of dull varnish, which may be buffed to a velvety sheen when dry. A final coat of wax may now be applied, but if you require a durable finish, either a varnish or a third coat of lacquer is recommended.


No matter how you finish plywood doors, be sure to apply the same number of coats to both surfaces and to all edges. This prevents the possibility of warpage due to uneven moisture absorption.

Lacquer Finish: Apply a coat of sealer to open-pored wood like oak and mahogany and sand lightly when dry. Apply two or three coats of lacquer, steel-wooling between coats. Buff and wax. Fabulon, a plastic resin finish, has proven extremely useful for hardwood plywood. It brings out the grain beautifully and, as it can be exposed to hot liquids and alcohol without ill effects, makes an excellent finish for coffee tables and other furniture. •-



FOR PROJECTS that do not require full-size 4x8-foot sheets of plywood, many hardware and lumber dealers carry racks of Handy Panels in 2x4-foot and smaller sizes. These are easy to handle, work with.

On the following pages
you will find some excellent
indoor plywood projects . . .



THIS desk grows
with user. will
give good service
for many years.

growing desk

Its height can be altered from 24 to 29 inches

YOU seldom find student furniture that "grows" with the user. This desk will do that. Construction is simple, straightforward and sturdy, so it should serve well for years, as the writing surface height can change from 24 up to 29 inches.

Select joint details to be followed from alternates given. Cut parts as required for rabbeted or butt joint construction. Check cabinet parts to insure fit before assembling. All joints should be glued and nailed.

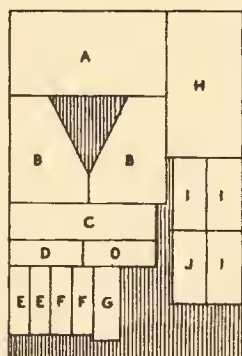
Join sides with top and bottom shelf after relieving for hinge, then nail back in place. Nail through bottom and back into drawer divider "G" after attaching drawer sup-

ports at lower edge as shown. Nail through upper shelves "I" into partitions "N" and install with partition "J" and intermediate shelf.

Check fit of drawer parts in place and assemble as shown to meet in center, hiding drawer divider panel. Drawer fronts project past bottoms for finger pull.

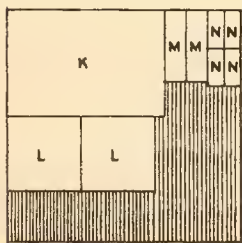
Drill six holes in sides at heights given, spaced according to bolt holes in steel frame you can have made to this drawing by practically any welding or metalworking shop.

Sand the entire unit carefully. Then paint and finish it as desired. Final product will be this beautiful growing desk. •



3/4" x 4'-0" x 5'-0"

CUTTING DIAGRAMS
ALL PLYWOOD INTERIOR A-A



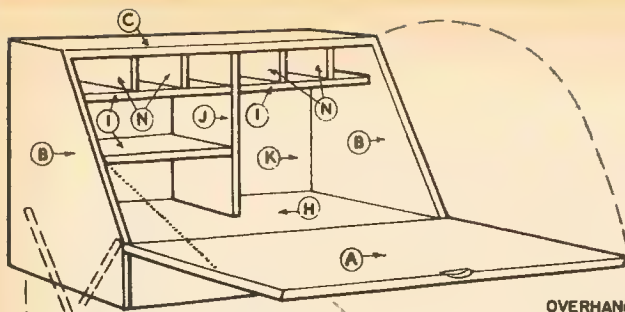
1/2" x 4'-0" x 4'-0"

PARTS SCHEDULE

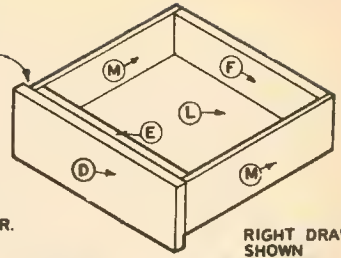
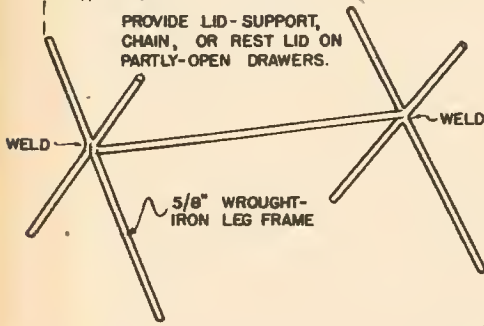
CODE	NO. REQ'D	SIZE	PART IDENTIFICATION
A	1	17 3/4" x 32"	Desk Lid
B	2	16" x 22"	Side
C	1	7 1/2" x 30 1/2"	Top
D	2	5 1/4" x 15 1/4"	Drawer Front
E	2	4 3/8" x 13 3/4"	Inside Drawer Front
F	2	4 3/8" x 13 3/4"	Drawer Back
G	1	5 1/4" x 14 3/4"	Divider Between Drawers
H	1	15 1/2" x 30 1/2"	Bottom Shelf
I	3	7 1/2" x 14 3/8"	Shelf
J	1	7 1/2" x 15 1/4"	Vertical Divider
K	1	22" x 30 1/2"	Back of Unit
L	2	13 3/4" x 13 3/4"	Drawer Bottom
M	4	4 3/8" x 15 1/4"	Drawer Side
	9 Lin. Ft.	3/4" x 3/4"	Drawer Supports
	1 Only	See Drawings	Wrought Iron Frame
	1 Pc.	32" Long	Piano Hinge
	1 Only	As Required	Chain or Lid-Support

Miscellaneous—6d Finish Nails and Glue

3/16" Machine Bolts as required

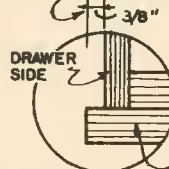


PROVIDE LID-SUPPORT, CHAIN, OR REST LID ON PARTLY-OPEN DRAWERS.

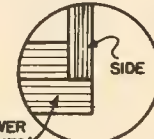


RIGHT DRAWER SHOWN

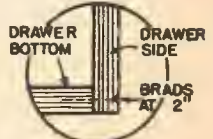
OVERHANG RIGHT SIDE OF LEFT DRAWER AND LEFT SIDE OF RIGHT DR.



DETAIL 1.



DETAIL 2.

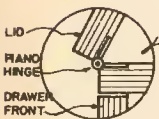
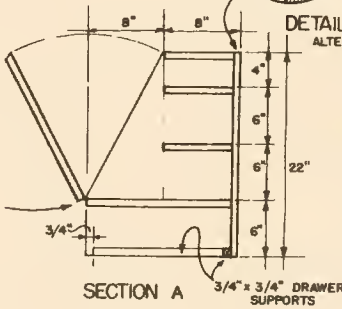


DETAIL 3.

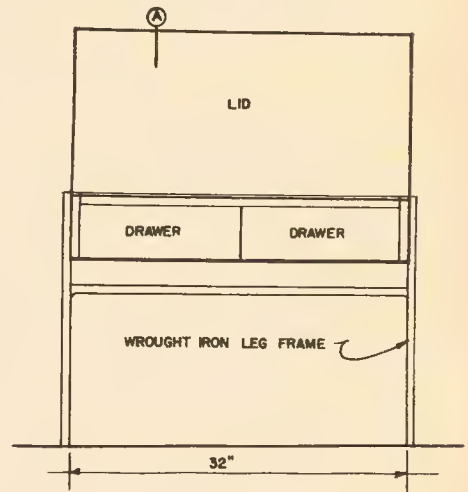
DRAWERS DETAILED SO THEY CAN BE MADE WITH HAND TOOLS (NO RABBETS, ETC.)



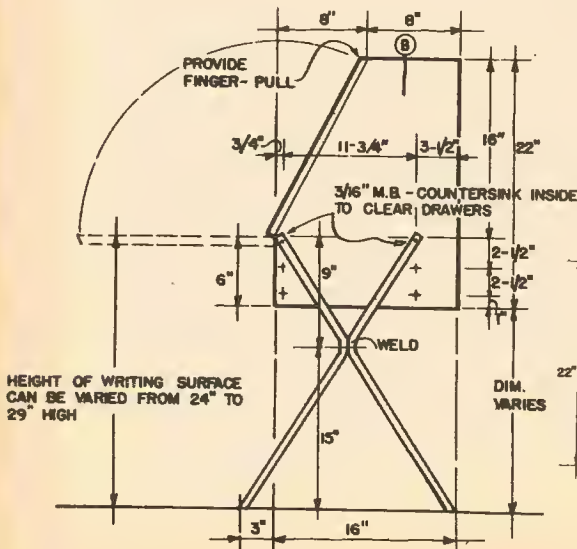
DETAIL 4. ALTERNATE



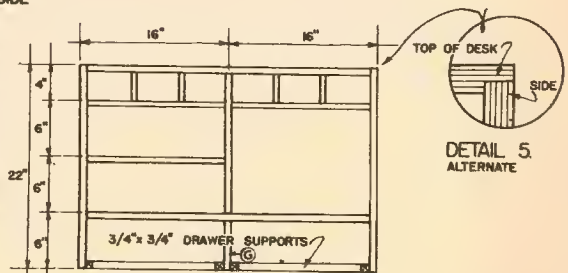
DETAIL 6



FRONT ELEVATION



SIDE ELEVATION



SECTION B



DETAIL 5. ALTERNATE



INDOOR PROJECT No. 2

wall-hung writing desk

It occupies little space, has many uses in the home

THIS ATTRACTIVE wall-hung desk has convenient pockets in the writing leaf for paper and envelopes.


THIS compact, yet roomy, piece of furniture has many uses. In the kitchen, it's fine for keeping household accounts. On the living room wall, it's handy as a place to carry on busy correspondence yet folds away to occupy little space. Your youngster will find that it takes some of the pain out of doing his homework in his room.

Make it of any attractive hard or soft wood and finish it with three coats of water-white lacquer or any finish of your choosing.


This is what you'll need to build your

desk: 10 feet of 1x10-inch lumber. A panel of $\frac{1}{4}$ -inch hardboard 18x29 inches. A panel of $\frac{1}{4}$ -inch plywood to match the lumber 27x38 inches with the grain running the 27-inch dimension. Eight $1\frac{1}{4}$ -inch No. 8 flathead screws and $\frac{1}{2}$ -inch caps or pieces of dowel to cover them. Twenty-eight inches of $\frac{3}{4}$ -inch piano hinge and a pair of 10-inch chest lid supports.


Actually, you can build this entire unit from scrap plywood of any kind if you wish. Merely follow the instructions given on the next four pages and adapt. •



CUT THE four boards shown: one $1 \times 7\frac{1}{2} \times 29$ in., one $1 \times 6 \times 30$ in. (bevel one edge of this at a 11 degree angle) and two pieces $1 \times 20 \times 6\frac{1}{32}$ in. at one end and 10 in. at the other. (You'll waste less wood to get the last two boards by gluing up 1-in. stock to $1 \times 16\frac{1}{4} \times 20$ in and ripping it at a diagonal from a point $6\frac{1}{4}$ in. along one $16\frac{1}{4}$ -in. edge to $6\frac{1}{4}$ in. from opposite corner of other $16\frac{1}{4}$ -in. edge.)



RABBET both ends of 30-in. board $\frac{1}{2}$ in. deep and 1 in. wide on the 6-in. surface. Plow a groove $\frac{1}{2}$ in. deep and 1 in. wide 2 in. along from the wide end of the 20-in. boards. Stop the groove $7\frac{1}{2}$ in. from the straight edge of the boards. These grooves make a blind joint with the 29-in. board and should be the reverse of each other. Square up end of cut with chisel or mortising attachment. Cut a rabbet $\frac{1}{4}$ in. deep and $\frac{1}{2}$ in. wide in one edge of 29-in. board. Cut the same rabbet in the straight edge of the 30-in. board and both 20-in. boards. These rabbets are to take the back of the desk as shown in photograph at top of next page, should be on same side of wood as previous grooves cut.



NOW ASSEMBLE box with glue and screws. Put two screws in each joint. Counter bore for screw heads and cover with caps.

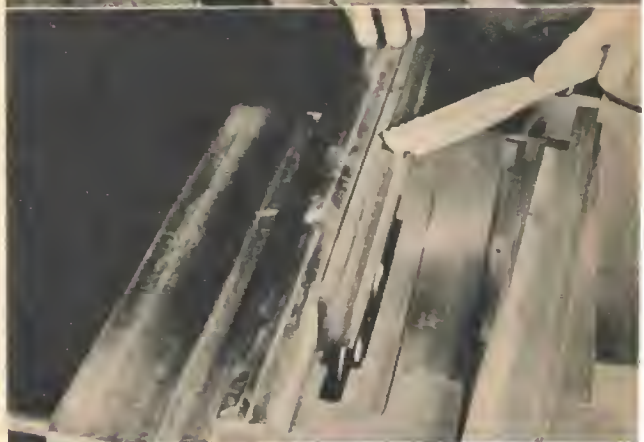
TURN THIS frame over and glue in the back of $\frac{1}{4}$ -in. hardboard 18x29 in. Use 1-in. finishing nails or 1-in. blue lath nails as shown.



CUT TWO pieces 1x2x20 in. Trim one end of each at a 12 degree angle. Remove 1 in. of wood from both pieces beginning $3\frac{1}{2}$ in. from the wide angle corner as shown.



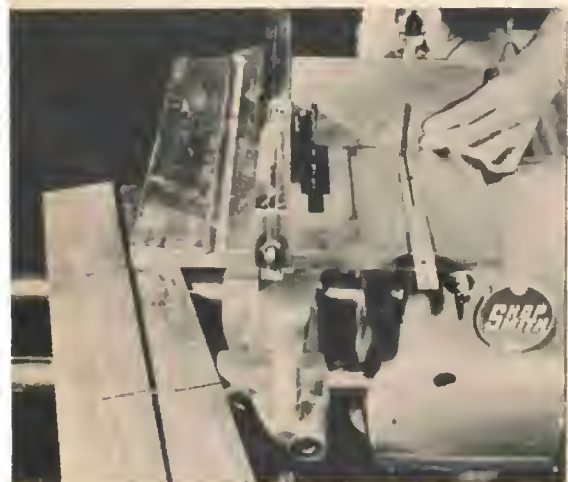
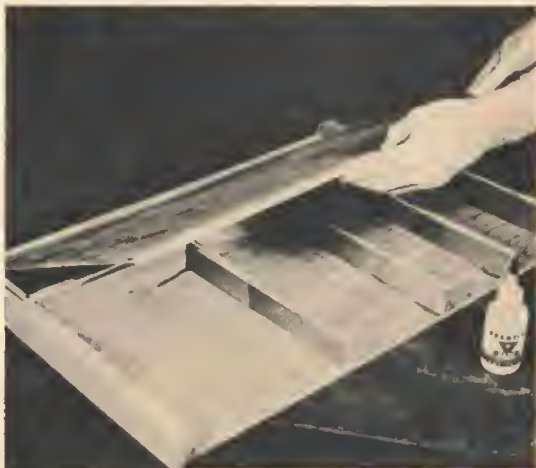
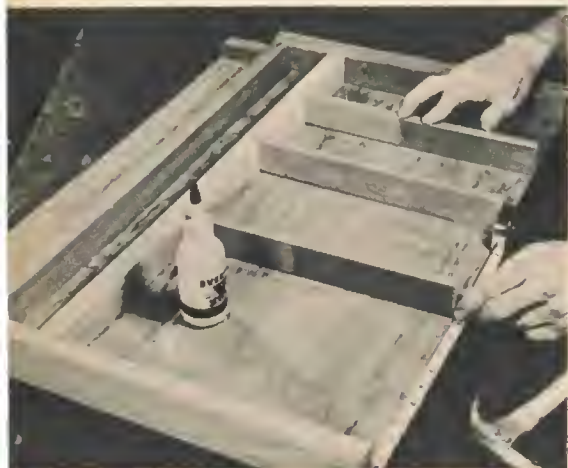
RABBET both edges of one side of each of these pieces $\frac{1}{4}$ in. deep and $\frac{1}{2}$ in. wide. Make one pair of grooves the reverse of the other. Pieces are ends of your desk leaf.



CUT A PANEL of $\frac{1}{2}$ in. plywood 20x27 in. and glue this into the long grooves cut in photo above. Use brads to hold panel until glue sets if you haven't adequate clamps.



CUT TWO pieces $1 \times 1\frac{1}{2} \times 26$ in. Turn leaf assembly over and glue one of these flush with notch. Cut $\frac{1}{2}$ -in. slots in the $1\frac{1}{2}$ -in. surface of the other at 9 in. from one end and $4\frac{1}{2}$ in. and $9\frac{1}{2}$ in. from the other. Glue this piece into the frame 12 in. from the edge of plywood. Rip three pieces $\frac{1}{2} \times 1\frac{1}{2} \times 12\frac{1}{2}$ in. and glue these in as shown. The desk leaf is now ready for the writing surface. Cut a panel of $\frac{1}{4}$ -in. plywood 18×27 in. and glue this to the parts you've just assembled. Sand hox and desk leaf for the finish coat you wish to give it.



RIP TWO pieces from stock $\frac{1}{4} \times 4 \times 28$ in. and two $\frac{1}{4} \times 4 \times 8$ in. Cut $\frac{1}{4}$ -in slots half the width of the 28-in. pieces, spacing them to divide it equally. Cut same width and depth of slot in 8-in. pieces. Make one 1 in. from end and the other dividing the remaining distance. Then cut two strips $\frac{1}{4} \times 1 \times 4$ in. and glue and nail these to inside ends of desk box 7 in. from the top, as shown in second photograph above. Do neat job.

ASSEMBLE the slotted pieces made in previous step and slide this assembly in on top of the strips put in place in last photo on the opposite page.



LAY desk box on its back, fasten length of $\frac{3}{4}$ -in. piano hinge to edge of bottom shelf. Then attach other side of hinge.



Set the desk upright and attach the 10-in. chest hinges or desk hinges. Fasten to walls or room with $1\frac{1}{4}$ -in. screws through back. Be sure you hit studs, put washers over screws to keep them from pulling out.

double-duty desk

It's a combination unit which acts as both a typing table and a serving buffet



THERE'S an air of luxury about this double-duty desk designed by George Daniels of modern fir plywood. Ordinarily, you'll use it for typing, correspondence and paper work; then swing out the cabinet, and you have a handsome buffet and refreshment center when you entertain. Luxury? Total outlay for this attractive piece of furniture is less than \$20. Of course, you make it yourself, all from one standard 4x8 sheet of fir plywood.

In addition to plywood sheet, $\frac{1}{2}$ inch thick, you'll need 44 feet of edging strips, eight feet of $\frac{1}{2}$ x $\frac{1}{2}$ -inch stock, seven-foot length of 1x2 inch, and a three-foot length of 2-inch closet pole, all of plywood. Hardware includes: nails and screws, snap-type door catch, two-foot length of piano hinge. Use ordinary fix-it tools: crosscut saw, coping saw, hammer, brace and bit, block

plane, crank drill, nail set, try square, screw driver and yardstick.

Place the best side of the panel up for measuring and cutting. Following chart and photograph, plot out desk parts carefully. Cut out with sharp crosscut saw, planing edges to fit flush. Driving nails in only halfway, put cabinet parts together. Set in 4-inch length of pole in top panel, $\frac{1}{2}$ inch from side. Do not glue.

Next, cut holes for closet-pole peg in three 4-inch squares of plywood. Drill starting holes with bit and brace, finish with coping saw. Now cut hole in cabinet top for peg (on which table top pivots). Sand peg for easy fit in plywood squares. Next, lightly hammer seams of cabinet apart, keeping aligned and assembled, and coat both joining surfaces with glue, working glue into seams with brush. If edges

are frayed, mix fine sawdust with casein-type glue which hardens well, fills gaps.

Now, you're ready for trim; the thin molding edge gives your pivot desk a professional finish. To make perfect diagonal corner cuts, use miter box, or mark squares and pencil diagonals across them to guide saw. Trial-fit mitered trim around cabinet top and smooth with garnet paper to fit snugly. Tack lightly, or if fit is not perfect, glue edging in place, leaving trim slightly raised from plywood surface. Plane trim level when glue has hardened. Cut ends of table unit so they conceal ends of sides.

To add legs, cut tiny wedge-shaped pieces from narrow ends of legs to make them fit at center joint. Glue outer legs to inside of table top. Glue four-inch plywood squares with holes together, then to underside of table top. Plane closet-pole to

tapered shape for removable pivot. Add shelves to cabinet by making cleats from leftover plywood; shelves slide right in to hold typewriter and supplies.

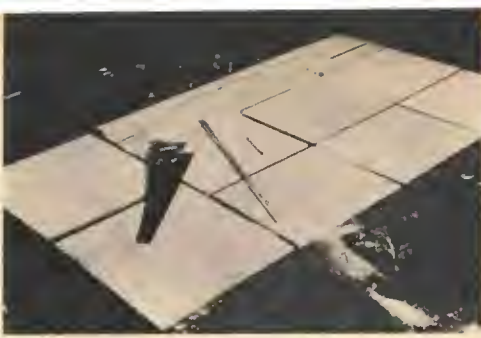
Finish in one of three ways. For a new light-stain glaze that brings out the full beauty of the wood-grain, prime with thin white undercoat of one part turpentine or thinner to one part paint. If desired, wipe or dry-brush for effective grain show-through. Sand lightly when dry. Seal with one coat thinned white shellac or clear resin sealer (omit this coat for deeper color). Sand lightly when dry. For color, apply one coat interior undercoat or enamel thinned with equal part thinner or turpentine. Wipe or brush to desired shade. Sand when dry. For long-lasting outer surface, apply one coat of flat varnish, hand-rub with steel wool when dry. •

MODERN double-duty desk made from sheet of plywood has handsome proportions, look of custom furniture.

OPEN CABINET brings to view the typewriter, correspondence supplies. Table is anchored by closet-pole peg.

CABINET readily detaches and storage pedestal swings down to provide a spacious buffet for entertaining.





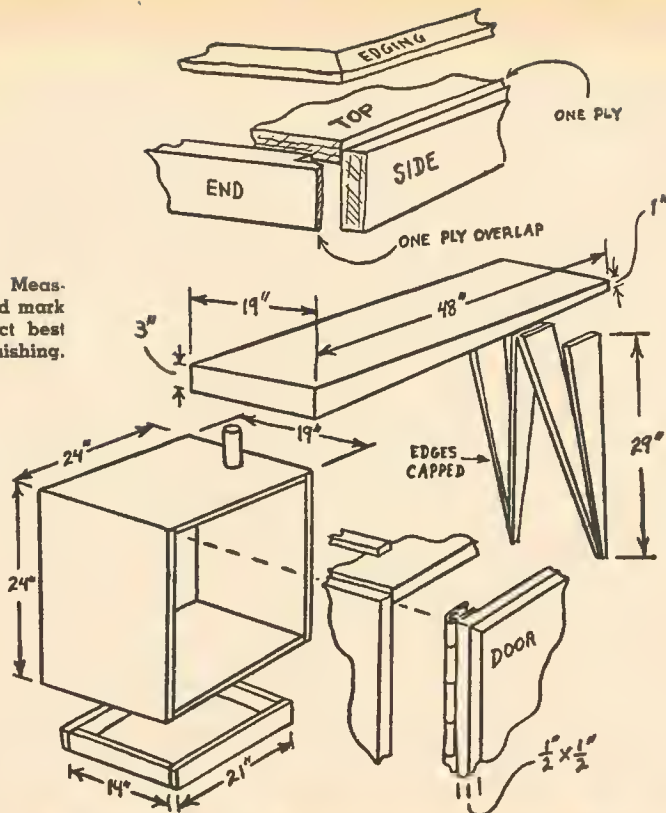
YOUR TOOLS and materials include: crosscut saw, coping saw, hammer, brace and plane, crank drill, nail set, try square, screw driver, yardstick, bags of nails and screws, snap-type door catch, and a 2-foot length of piano hinge for cabinet door. Wood is $\frac{1}{2}$ -inch plywood, 4x8 feet, 44 feet of edging strips, 8 feet of $\frac{1}{2}$ x $\frac{1}{2}$ -inch stock, a 7-foot length of 1x2-inch, and a 3-foot length of 2-inch closet pole.



DO ALL your sawing with the good side of plywood up, using a very sharp crosscut saw. True up edges with a plane so that parts will fit flush.

LIGHTLY NAIL parts of cabinet, leaving nails half out. Four-inch length of pole is set in half an inch from the side of the top panel, unglued.

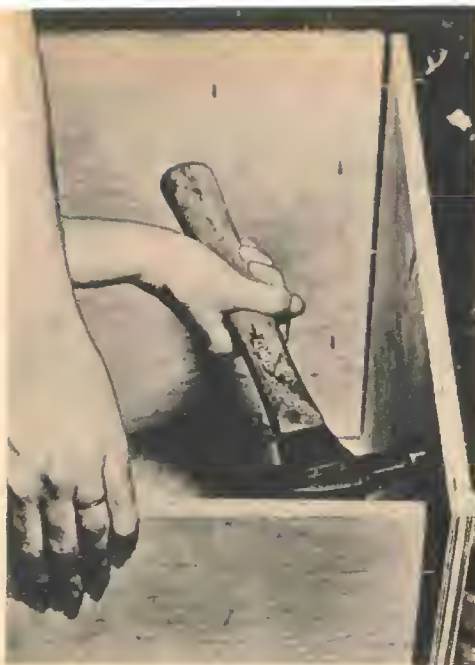
THE PARTS of your desk. Measure the areas carefully and mark them before cutting; select best side of panel for easier finishing.



USE COPING SAW to cut holes for the closet pole peg in 4-inch squares of plywood. However, first drill a starting hole with your bit and brace.



BEFORE gluing begins, cut hole in cabinet top for closet pole peg on which table top pivots. Sand peg for easy fit in squares with the holes.



CABINET is ready for gluing. Tap the seams lightly apart, but keep aligned and assembled, and coat with glue both surfaces to be joined later.



WORK glue into seams with brush. If edges are at all frayed, mix fine sawdust with a casein-type glue which fills the gaps and hardens well.



UNLESS you have a miter box for the making of perfect diagonal corner cuts, mark squares and pencil diagonals across them to guide the saw.



GIVE mitered edging a trial fit around the top of cabinet. Smooth cut edges with garnet paper if they do not fit snugly. Tack down lightly.



GLUE edging in place when fit is not perfect, leaving edge slightly raised from plywood surface. When hard and firm, plane the surfaces level.



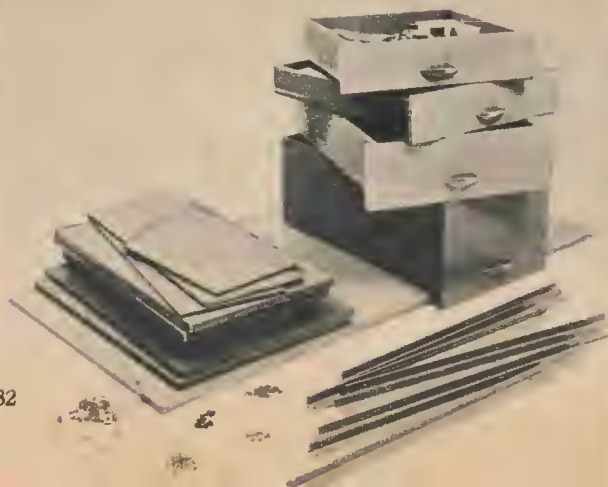
CUT the ends of the table unit so that they will conceal the ends of the side pieces. The wide piece is for the end which will rest on a peg.



CUT tiny wedge-shaped pieces from the narrow ends of legs to make them fit at center joint. Glue the outer legs to the inside of the table top.



THREE squares of wood with round holes are glued to the underside of the table top. The tapered third leg is a closet pole planed to this shape.



READY-TO-ASSEMBLE parts of desk include drawers, plywood, hardware. Note holes drilled in shelf-panel corners for easy mounting on angle brackets of leg-iron. Angle-iron legs with shelf brackets attached are ready for mounting to side and drawer panels. Holes punched at intervals in leg-iron made at steel shop.

"big top" desk

It's a wonderful solution to problems of limited space



EVER longed for a desk surface big enough so you could lay out all your papers when you're working on bills, income tax, scrapbooks or writing a paper for your next club meeting? Or wanted a surface to cut out a new dress? Or has Dad wished for a desk on which he could really roll out blueprints for some pet project of his? Here's the answer to that need: a desk with a full 30x60-inch table surface, complete with roomy file drawer, three utility drawers, space for handy typewriter, magazines or reference books, and all of it in the pleasing, airy design of today's modern furniture. Cost for lumber is well under \$20.

This designer's desk, which you'll find everyone in the family will clamor to use, is yours in a weekend, using simple home tools and modern fir plywood. Directions and material-lists are all here:

You will need two 4x8-foot sheets of plywood, one $\frac{1}{4}$ -inch thick, and one $\frac{3}{4}$ -inch thick, cuts of $\frac{1}{2}$ -inch white pine for drawer sides and ends, legs, hardware and paint. Tools necessary are block plane, hand saw, drill, square, hammer, screwdriver, tape measure, pliers, and brush or roller for painting.

To save time, drawers can be made-to-order by cabinetmaker, cost over that of materials being approximately only seven dollars. Or you can make your own.

OVERSIZE table surface makes this modern fir-plywood desk highly desirable for all-family use. Good design, balance and proportion distinguishes easily-constructed, inexpensive furniture-piece. Appearance is enhanced by lightweight but sturdy modern plywood in airy furniture design preferred in contemporary interiors. Photo right, shows individual units. Desk surface fits on top of these two units. Instructions in text, photos.





THIS PHOTO shows the leg units with brackets attached, ready to mount to side and drawer panel.



A HOLE IS marked, then drilled in the panel in order to allow for mounting onto the angle bracket.

THIS CLOSE-UP shows how the angle is mounted to the horizontal panel. Job is really very easy.



LEG HAS BEEN removed to show how bracket fits onto panel. Note notch on panel for neat, close fit.



Angle iron or legs can be cut and matched to length at your steel supplier, 48 required holes punched at steel fabricator's for a nominal charge.

For drawer sides and ends, necessary white pine cuts include: two $16\frac{3}{4} \times 3\frac{1}{2}$ -inch, two $23 \times 3\frac{1}{2}$ -inch, two $16\frac{3}{4} \times 2\frac{3}{4}$ -inch, two $23 \times 2\frac{3}{4}$ -inch, two $16\frac{3}{4} \times 5$ -inch, two 23×5 -inch, two $26\frac{3}{4} \times 10$ -inch, two $13\frac{1}{2} \times 10$ -inch cuts, and ten $24 \times \frac{3}{4} \times 1\frac{5}{8}$ -inch shelf-guide strips.

Hardware includes: 4 handles, 8 cap screws, $\frac{3}{8} \times \frac{3}{4}$; 24 Unistrut shelf-hanging brackets No. P6026; 16 chrome bolts and nuts, $1 \times \frac{3}{8}$ inch; 6/10, 24 chrome bolts and nuts, $\frac{3}{8} \times \frac{1}{2}$ inch; 7/10, and 24 chrome bolts and nuts, $\frac{1}{2} \times \frac{1}{8}$ inch; 6/10, lengths of 1-inch angle iron for legs. If deep file drawer is to hold heavy materials, a drawer-roller is recommended. Paint and hardware, including punching of angle iron, should total

approximately ten dollars. Drawer-roller is extra.

With materials at hand, start your desk by laying out cuts on plywood panels, measuring each panel accurately according to charts for $\frac{1}{4}$ -inch and $\frac{3}{4}$ -inch plywood. Make sure square angles are square. Cut out, sanding edges of all $\frac{3}{4}$ -inch panels.

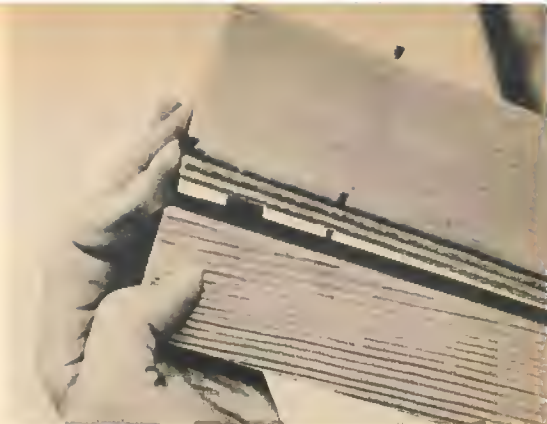
Key to plywood sheet patterns is as follows:

For $\frac{3}{4}$ -inch plywoods: (A) desk top, 30×60 -inch, (B) drawer fronts, two $20 \times 4\frac{1}{2}$ -inch cuts, (C) drawer fronts, $20 \times 6\frac{1}{2}$ -inch, (D) top and bottom for 3-drawer box, two 20×28 -inch cuts, (E) top and bottom for 1-drawer box, two 16×28 -inch cuts, and (F) drawer front, 16×11 -inch.

For $\frac{1}{4}$ -inch plywood: (A) drawer box sides of 1-drawer box, two $28 \times 10\frac{5}{8}$ -inch cuts, (B) drawer box sides of 3-drawer



SIDE PANEL for three-drawer box. Strips of wood hold the two shelves, also serve as drawer guides.



CLOSE-UP of method for pinning drawer shelf to strips which perform function of guide and support.

MANY LUMBERYARDS carry ready-grooved drawer stock in several widths at no extra cost.

FINAL STEP, aside from painting, is to attach the legs to the top by means of an angle bracket.



box, two $27\frac{1}{2} \times 14$ -inch cuts, (C) drawer box back panel for 3-drawer box, $19\frac{1}{2} \times 14$ -inch, (D) drawer box back panel for 1-drawer box, $15\frac{1}{2} \times 10\frac{5}{8}$ -inch, (E) big drawer bottom, $14 \times 26\frac{1}{4}$ -inch, (F) smaller drawer bottoms, three $17 \times 24\frac{1}{2}$ -inch cuts, and (G) drawer shelves, two $18\frac{1}{2} \times 24$ -inch cuts.

If you want the satisfaction of constructing the entire desk yourself, you may wish to purchase ready-grooved stock for drawers, available at many suppliers. Only drawback is that this provides $\frac{1}{2}$ inch less room in drawer interior.

With drawers made and plywood cut and sanded, you are ready to mount shelf brackets onto angle-iron legs with $\frac{1}{2}$ -inch bolts and nuts. Then put $\frac{3}{4}$ -inch shelves into place with $\frac{3}{16}$ -inch bolts and nuts. After drilling through holes for legs with $\frac{3}{16}$ -inch drill, fit side and back $\frac{1}{4}$ -inch

panels of drawer boxes into place with $\frac{1}{8} \times \frac{1}{2}$ -inch bolts.

Now dismount sides of 3-drawer box and place drilled strips in position. Tack and glue (Wilhold is recommended as an easy type to use). Remount after both sides are assembled and glue is dry, holding positioning strips firmly in place. Remove one front leg to slip drawer shelves into place. Mark and drill nail pinholes and replace leg.

Fit all drawers to unit. Accurately set desk top in position and secure with cap screws. Check desk for any final fitting. Disassemble unit for painting. Fill, sand, and paint plywood in finish desired. For over-all look of single decorative unit, paint legs, too. With paint dry, re-assemble your desk, and there you have it—your new family desk with the "big top" you've longed for! •



wardrobe desk

This unit fits under an eave,
makes use of sloping ceiling space



COMPLETED UNIT looks like this. It will provide much-needed storage space for your home, in addition to providing desk.

BUILDING this wardrobe desk is a simple job. Read instructions and study plans carefully, then get out the tools.

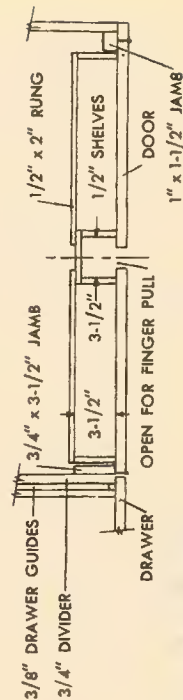
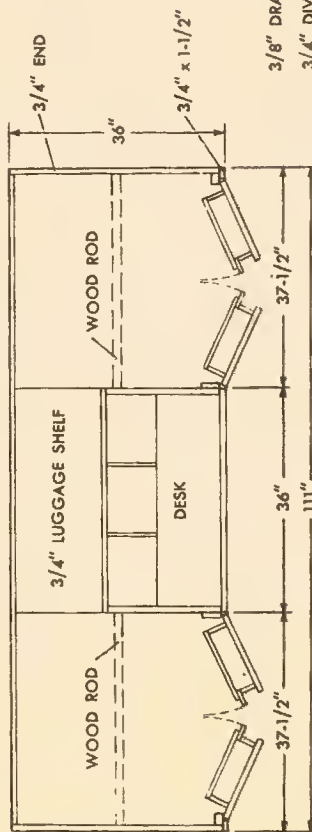
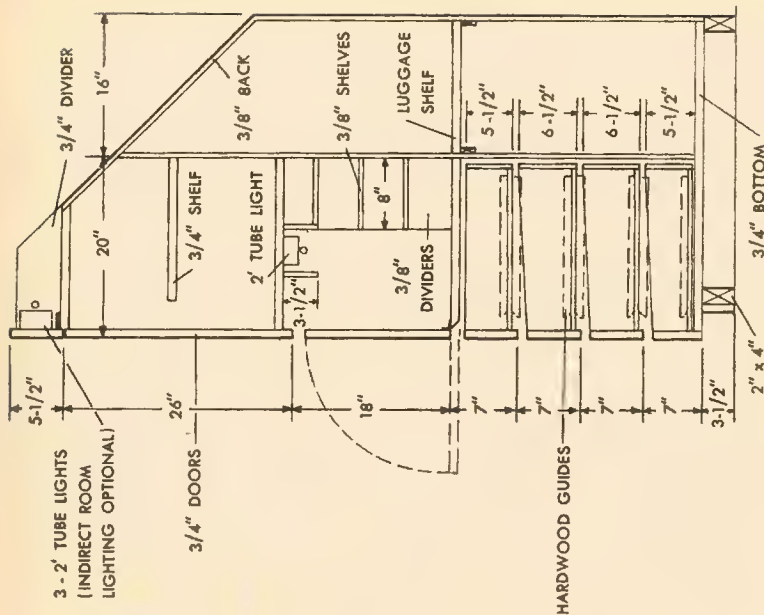
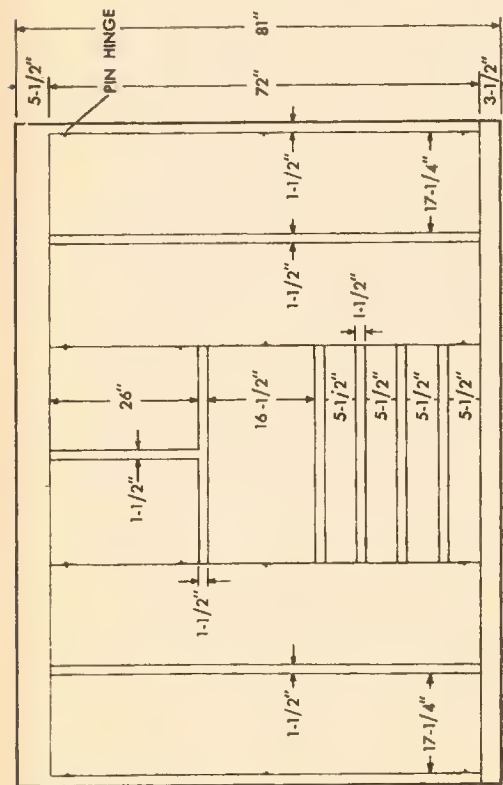
THIS handsome built-in puts waste space under a sloping upstairs ceiling to good use. With shelves and racks for accessories and spacious, full-length closets for hanging apparel, it's an all-in-one wardrobe that will double your bedroom storage space. Because it replaces the usual dresser and chest, it actually will make a cubby-hole bedroom look larger.

Altering dimensions, you can adapt the wardrobe to fit any location, slant-ceilinged or not.

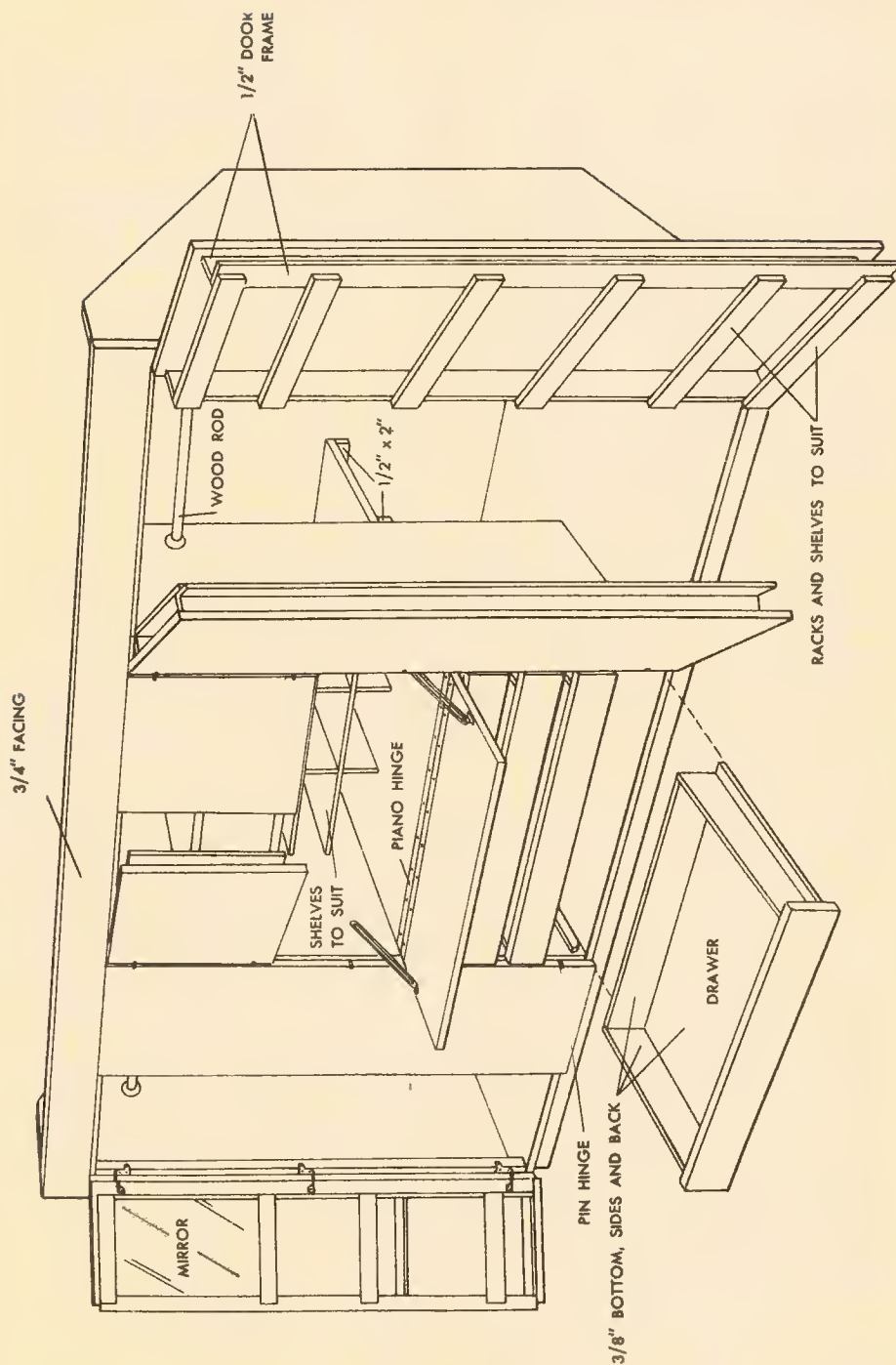
For the built-in shown in the plan you'll need eight panels of $\frac{3}{4}$ -inch thick plywood and six panels of $\frac{5}{8}$ -inch thick plywood, A-A grade Interior-type panels for doors, ends and partitions and Ply-Panel (A-D) for back, bottom and sloping top. Cut them in your shop to minimize muss upstairs.

Assembly is easy. First lay the base and bottom. Next set up ends, backs and dividers. Then fit the interior joinery and hang the doors. Butt-join plywood strips for base and block behind joints in long top facing.

If the ceiling above the unit gets hot in summer, bore one-inch diameter ventilating holes along the top and base. Finish your built-in to harmonize with your room scheme. Paint the inside a light color, perhaps clean white. •



THESE DIAGRAMS show building measurements for built-in storage unit planned for use under sloping area. Study plans carefully before undertaking project; this will save much time in the long run.



DETAILED SKETCH of entire unit is shown on this page, while opposite page gives dimensions by sections. This built-in will give you a chance to remodel, redecorate, reorganize family living areas.

INDOOR PROJECT No. 6

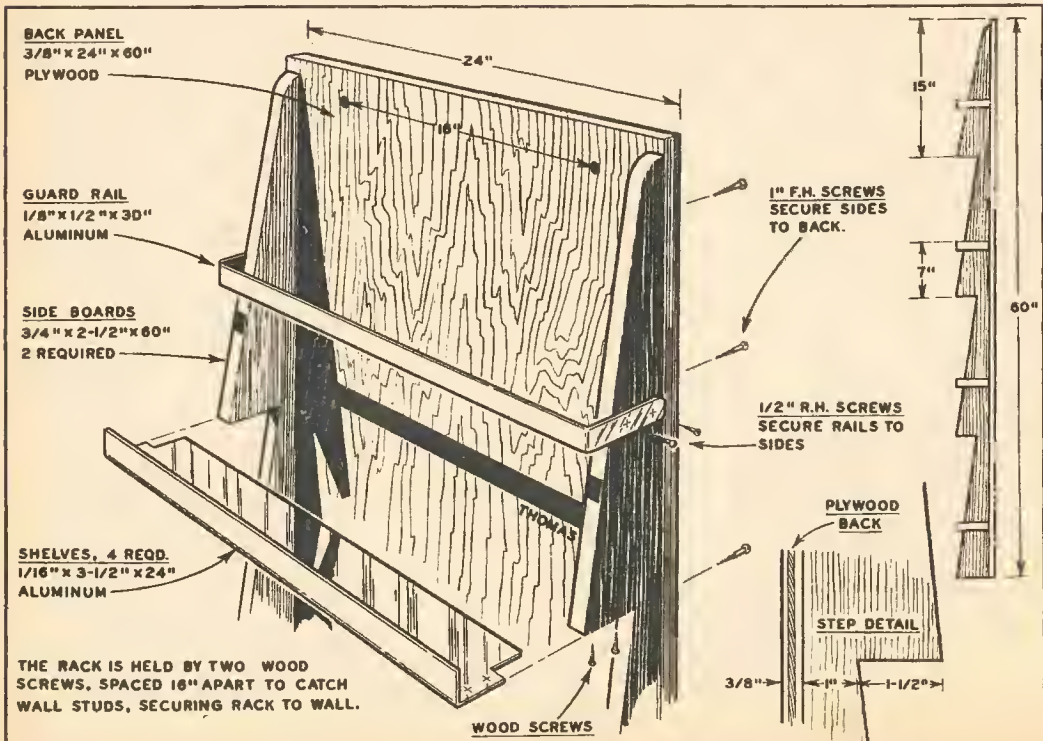
magazine wall rack

This plywood unit will hold
all kinds of magazines
in the very minimum of space

DESIGNED to fill up those bare spots on your foyer or study wall, this rack will hold the largest of magazines with a minimum of space.

Any type plywood can be used as the basic material. The shelves and guard rails

are made from do-it-yourself aluminum which can be bought at most hardware and dollar stores. Follow the drawing below for correct size and assembly procedure. Wood screws, spaced 16 inches apart to catch the studs, hold unit to wall. •



take-apart furniture

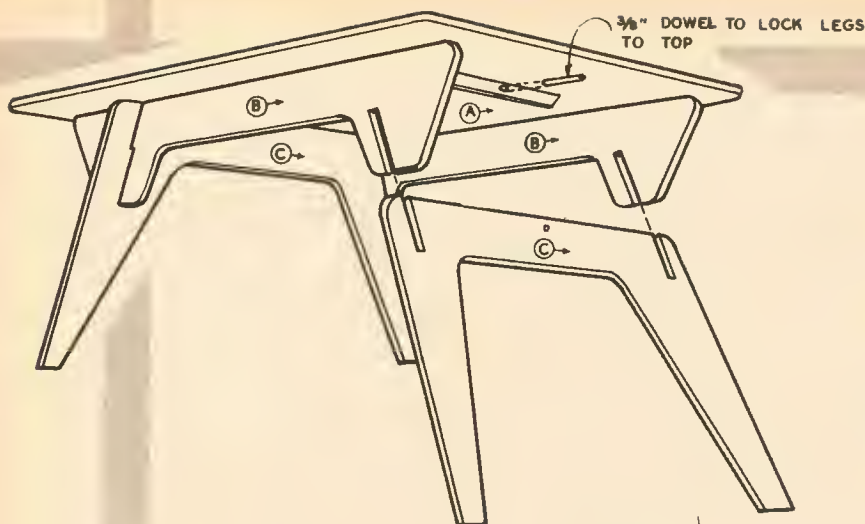
Youngsters will have a
lot of fun with these
slip-together play units

USING the dimensions in the drawings, make one full-size pattern of each of the parts on heavy wrapping paper. Check dimensions for accuracy and then lay out all the parts on a full sheet of plywood as shown in the cutting diagram. Allow for saw kerfs.

Now cut each plywood part to size. The quickest and simplest method is to use a saber saw. If one is not available, all outside cuts and accessible inside cuts can be made with a sharp hand saw. Remaining cuts can be done with a keyhole saw. When cutting the parts out of the panel leave all outside corners square. Then round corners where indicated to $\frac{1}{2}$ -inch radius with a wood rasp.

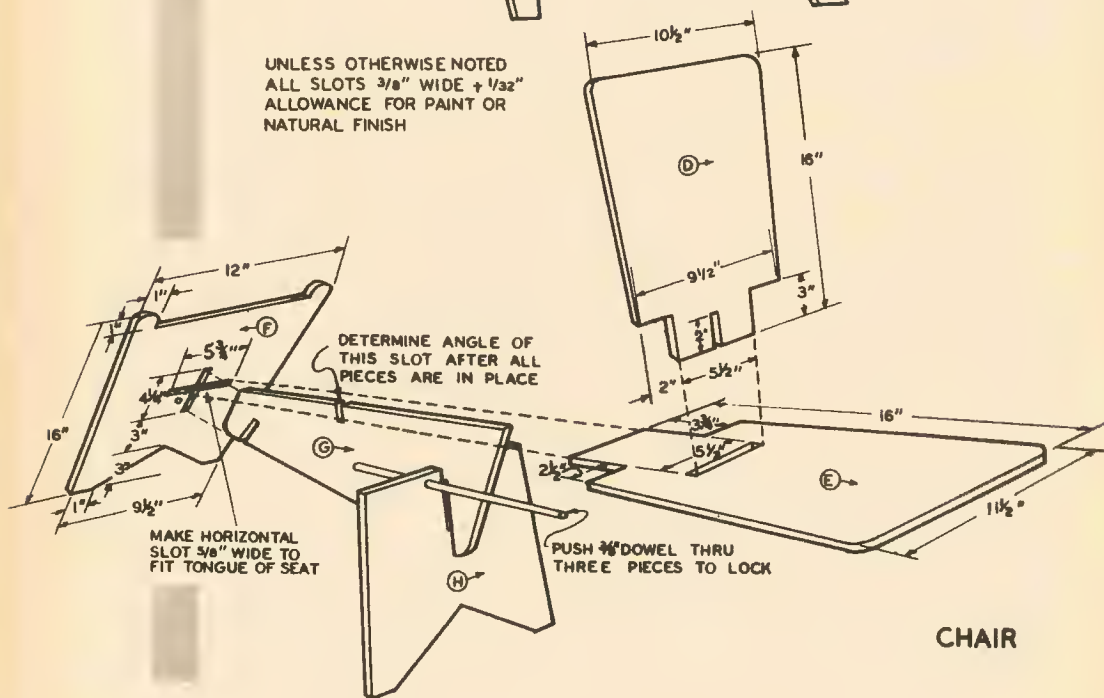
To gain rigidity after assembly, the slots in each piece must be accurate. These can be made by drilling a $\frac{3}{8}$ -inch hole at the bottom line of each slot and cutting into each side of the hole. Trim corners with





TABLE

UNLESS OTHERWISE NOTED
ALL SLOTS $\frac{3}{8}$ " WIDE + $\frac{1}{32}$ "
ALLOWANCE FOR PAINT OR
NATURAL FINISH



CHAIR

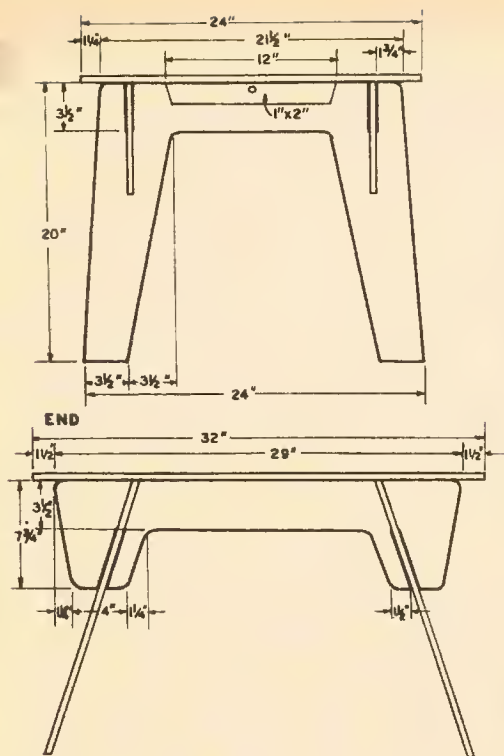
a sharp chisel. Cut all slots $\frac{3}{8}$ inch wide plus $\frac{1}{32}$ -inch allowance for paint or natural finish. Note that the horizontal slot in part "F" is not an angular cut. It must be made at least $\frac{5}{8}$ inch wide to provide access for the tongue of the seat which intersects at an angle. In part "G" note also that the angle of the top slot must be determined after assembly.

With the blade of the table saw set at 17 degrees off the vertical, make a sloped cut along the top edge of the 1x2-inch table cleat. Cut to length with ends sloped at

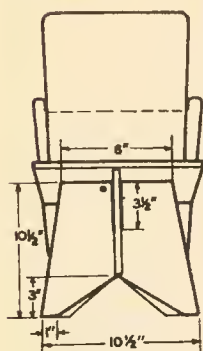
17 degrees also. Drill a $\frac{3}{8}$ -inch diameter hole at the center of each cleat.

Assemble table legs and frame and mark position of 1x2-inch cleats. Then fasten to underside of top with glue and screws. Mark and drill a hole in each leg frame for $\frac{3}{8}$ -inch dowel. Now assemble the chairs. Mark and drill holes for dowels through three pieces to lock as shown on drawings. With part "D" in position, mark location and angle of slot to be cut into part "G."

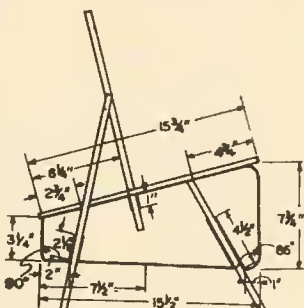
Disassemble and sand all edges with 1-0



SIDE



FRONT



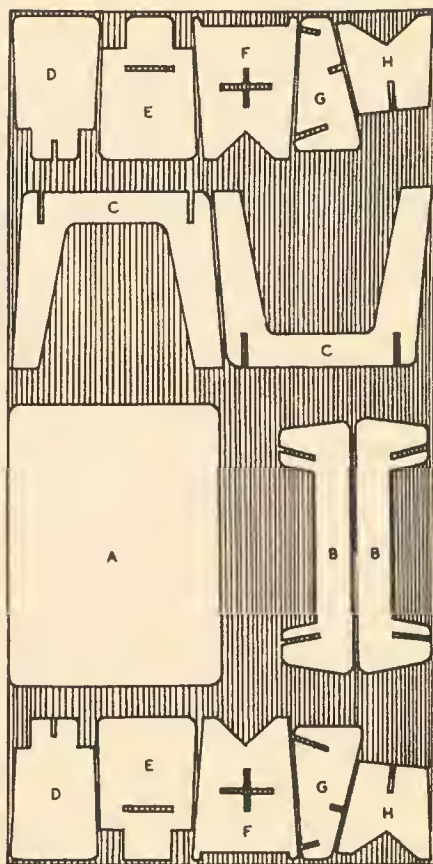
SIDE

paper on a wood block. Fill blemishes with spackle or wood paste and complete finish sanding with 3-0 paper.

Paint in a number of bright harmonizing colors if you wish or apply a natural finish. Follow manufacturer's recommendations for best results.

Simple lock joints made possible by the use of fir plywood holds the various parts rigidly together while in use; will slip apart easily for storage. Parts can be stored flat in a minimum amount of space and will withstand rough treatment. •

CUTTING DIAGRAMS



3/8" x 4'-0" x 8'-0"

INTERIOR OR EXTERIOR • DFPA • AA

PARTS SCHEDULE

CODE	NO. REQ'D	SIZE	PART IDENTIFICATION
A	1		Table Top
B	2		Table Frame
C	2	SEE	Table Legs
D	2	DRAWINGS	Chair Back
E	2	FOR	Chair Seat
F	2	DIMENSIONS	Chair Legs (Rear)
G	2		Chair Frame
H	2		Chair Legs (Front)
	2 Lin. Ft.	1" x 2"	Table Cleats
	2 Lin. Ft.	3/8" Dia.	Locking Dowels

MISCELLANEOUS—1" No. 8 F. H. screws
Glue & finishing materials

hi-fi cabinet

This beautiful model is easy on the budget



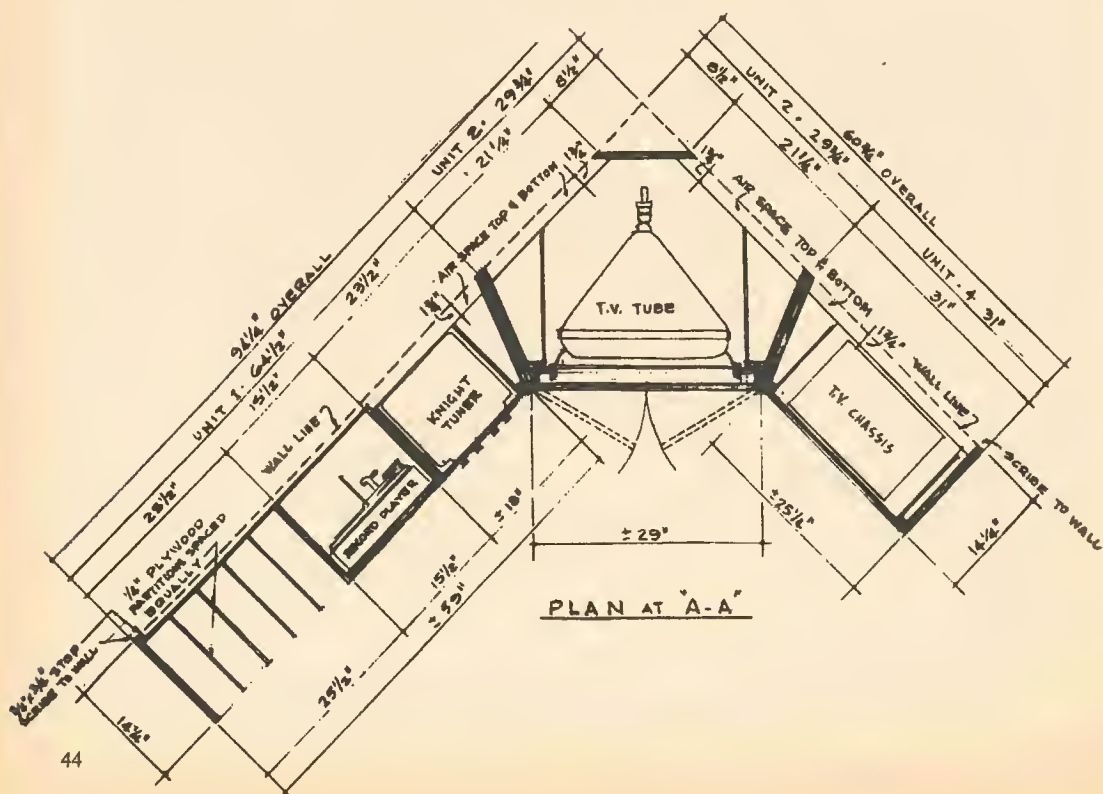
THIS unit not only fills the corner nicely, but provides ample space for storage of records, books, magazines and virtually any combination of hi-fidelity component on the market. The plan is flexible so that a television set may be easily included.

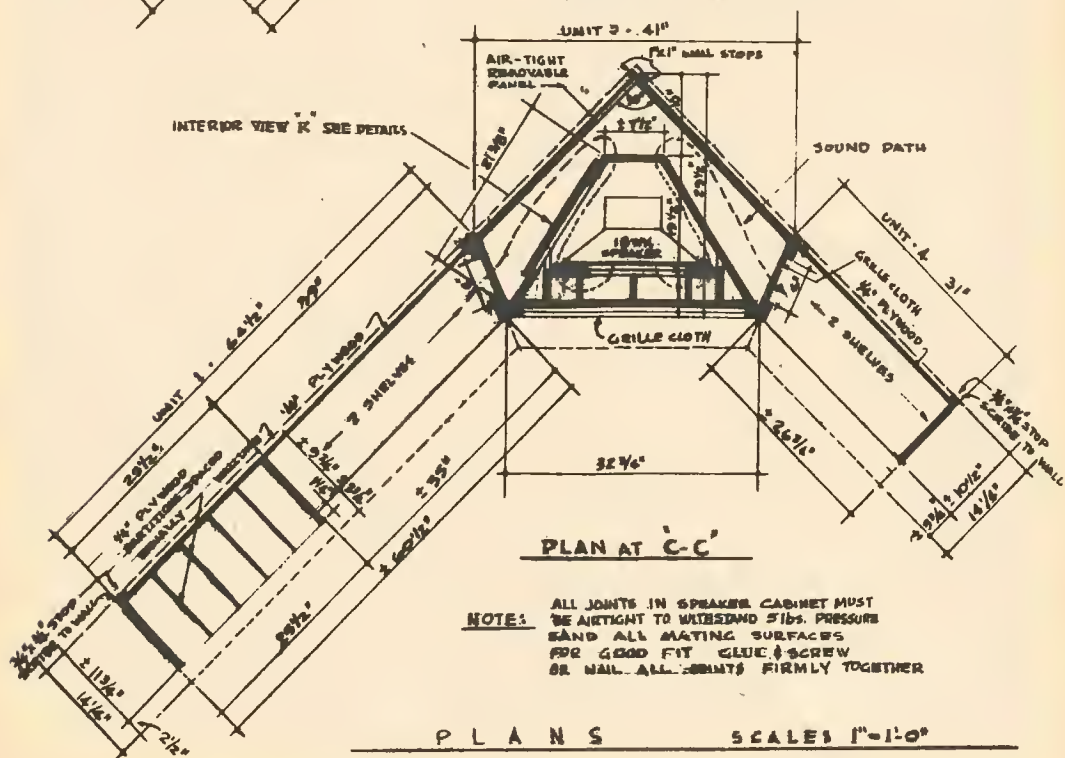
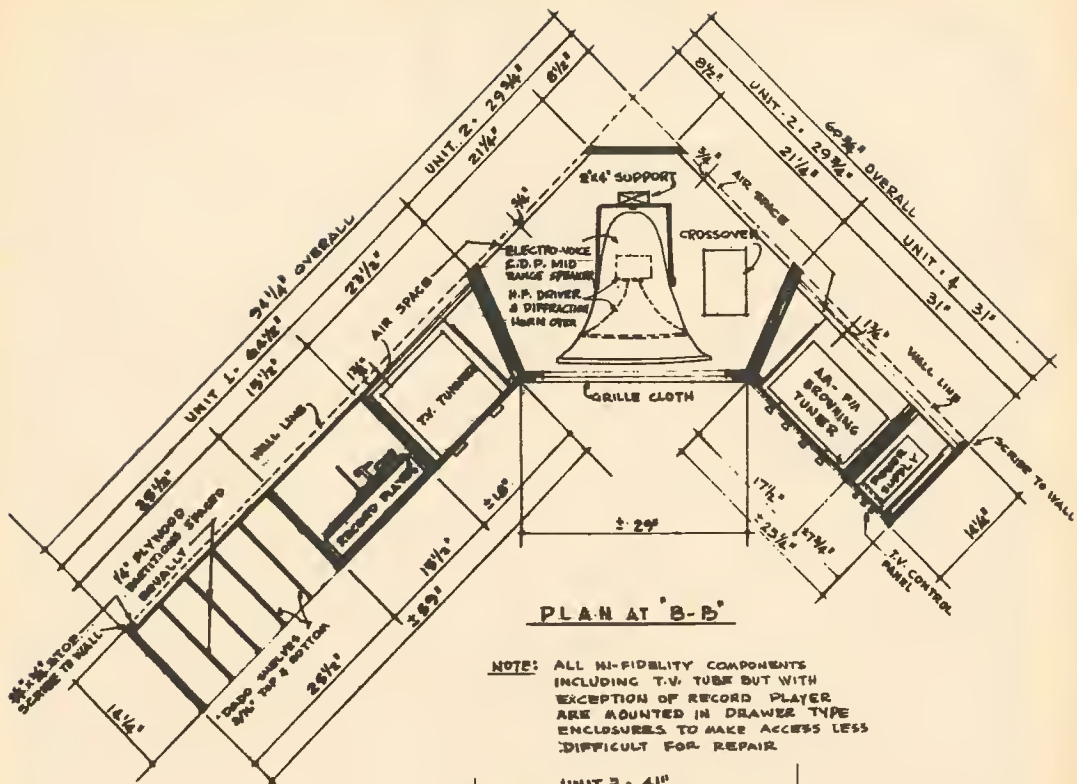
In one version of the wall, a television picture tube may be mounted in the exact corner of the installation. Or, the TV set can be installed on the right side. There is still plenty of room for the tuner, amplifier, speaker, and record player.

The entire unit is constructed with $\frac{1}{4}$ - and $\frac{3}{4}$ -inch panels of fir plywood. These are strong and easy to work with.

The wall stands 6 feet 9 inches high. Its left "arm" extends out 5 feet 9 inches along one wall, and the right arm covers 25 inches along the other wall. It protrudes either $10\frac{1}{2}$ or $14\frac{1}{4}$ inches from the wall, according to which version is installed.

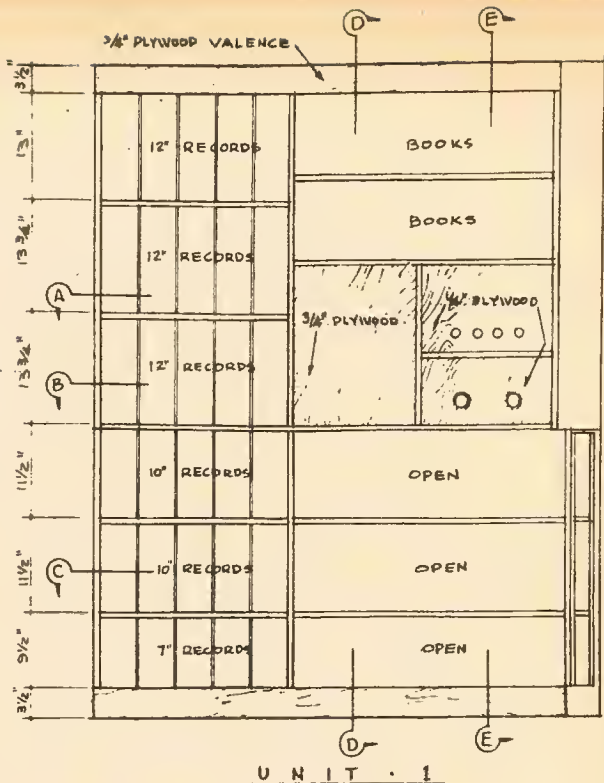
The music wall may be finished in any color desired to match the decor of the room. •





ELEVATIONS

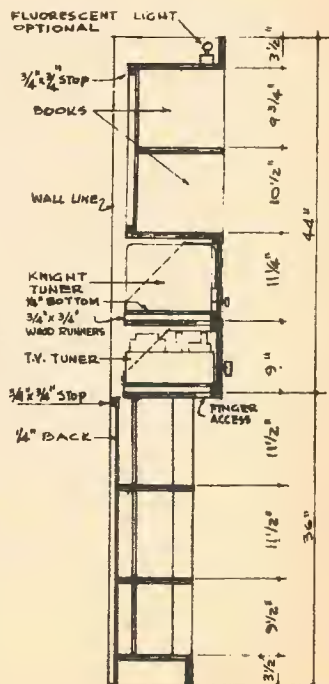
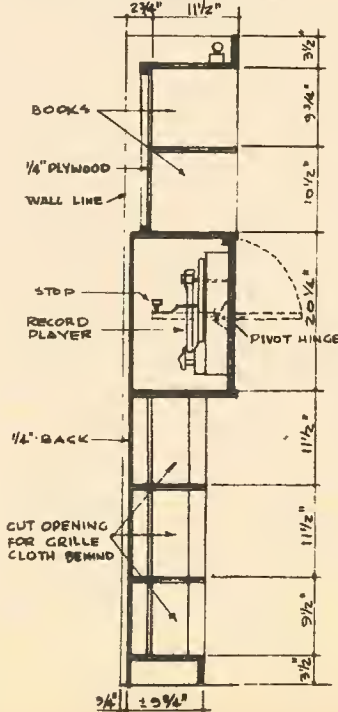
SCALE: 1" = 1'-0"



NOTE: FACE ALL EXPOSED EDGES WITH 1/4" x 3/4" HARDWOOD
ALL PLYWOOD 3/4" INTERIOR FIR
A-D UNLESS NOTED OTHERWISE

SECTIONS

SCALE: 1" = 1'-0"

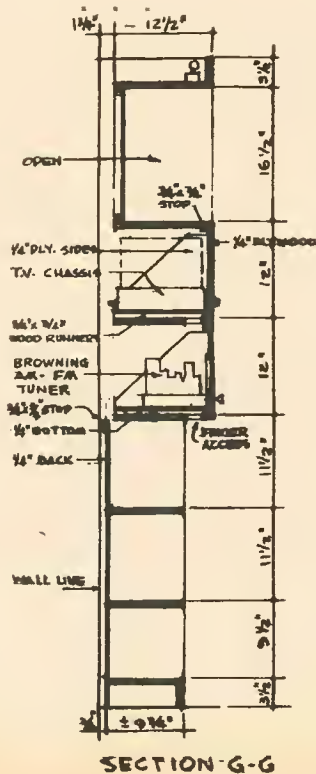
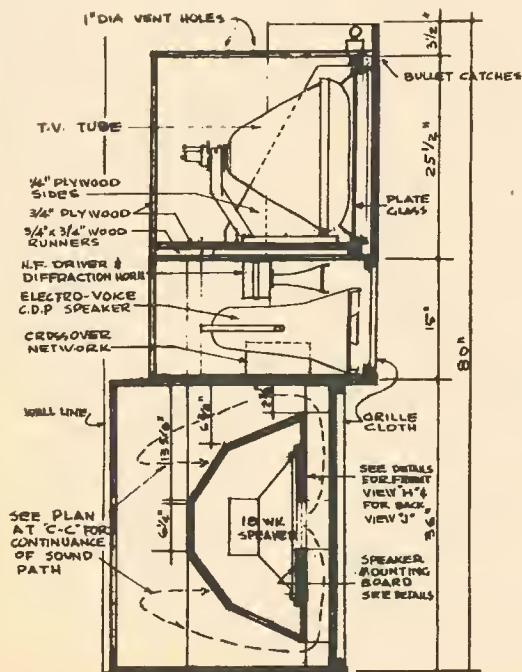
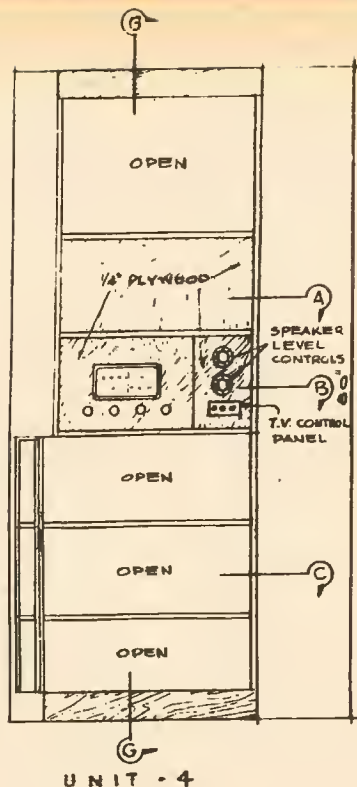
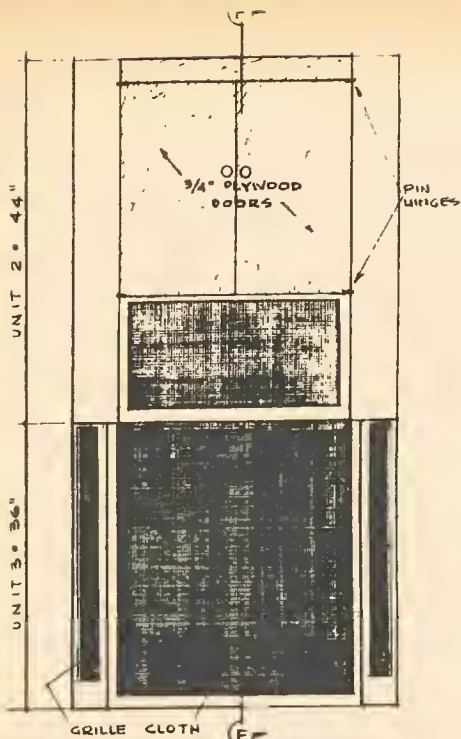


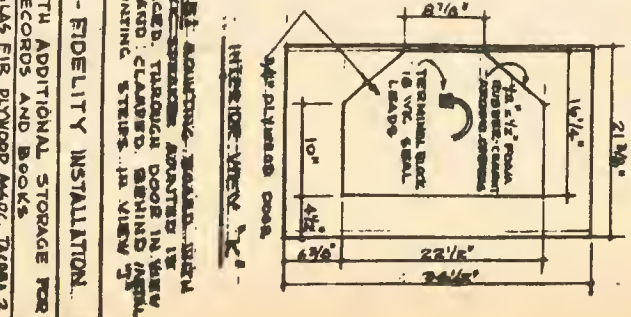
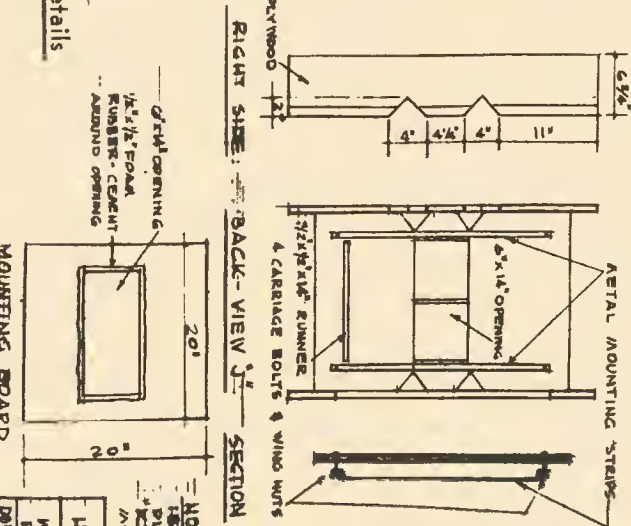
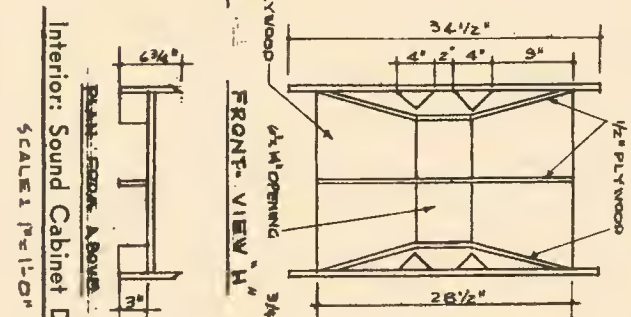
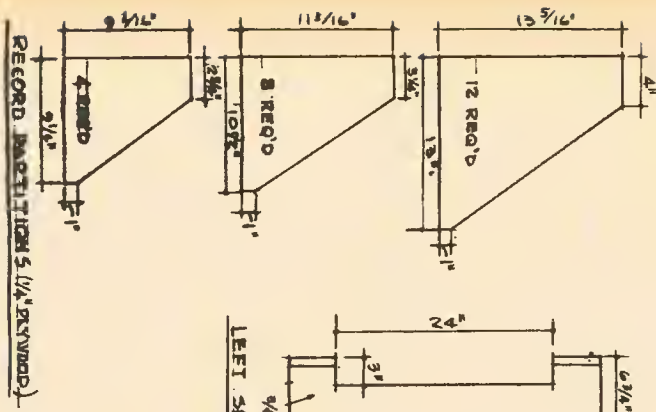
SECTION D-D

SECTION E-E

UNIT 2 = 44"

UNIT 3 = 36"





RECORD RECEPTIONS (1/4" PLYWOOD)

Interior: Sound Cabinet Details

SCALE: 1" = 1'-0"

NOTES: MOUNTING BOARD WITH 1/2" FOAM RUBBER CEMENT PLACED THROUGH DOOR IN VIEW AND CLASPED BEHIND METAL MOUNTING STRIPS IN VIEW

HI-FIDELITY INSTALLATION WITH ADDITIONAL STORAGE FOR RECORDS AND BOOKS

PAVILAS FIR PLYWOOD ASSOC. DRAWING 2

STUDY THESE detailed drawings for full instructions on building hi-fi unit. Do not undertake construction until thoroughly familiar with plans.

music center

Combine radio, TV and hi fi
in one beautiful, compact unit
made from easy-to-handle plywood



THIS handsome music center has many fine features, one being that the TV set can be swiveled around so that it can be seen from either the kitchen or the living room.

Dimensions given make it possible to cut all parts before assembly, but minor variations that generally crop out in a project this large make it advisable to cut and fit as you go. Identical dimensions on mating or matching parts still should be cut at the same time without changing saw setting for perfect fit.

Glue and nail all joints. Start at the base. Nail the mitered plywood legs to the rabbeted 2x3-inch frame. Dado bottom panel 24 for record album partitions and notch edges for 2x2-inch posts, 1x2-inch stiles and speaker mounting board before nailing to base.

Nail all posts and stiles, divider panels 14 and 20, and ends 13 and 17 in place next. Notice that a diagonal section is removed from the four posts about 18 inches above the base. Exact length of these segments depends on the height of the TV chassis your turntable must accommodate, as they are used later for corner posts in the sub-assembly for the TV turntable.

Before installing shelves, construct the airtight speaker enclosure shown in Section C. Dimensions and form shown were specified for the 10-inch speaker used in this installation. To modify for a 12-inch, 15-inch or co-axial speaker, consult your high-fidelity supplier. Line all surfaces of the enclosure completely with 1-inch glass fiber sound absorbing blanket, to control resonance.

You now are ready to install fixed dadoed shelves with panels 16 and 26. Note that an arc is cut out of tuner shelf 11, to let the TV turntable swing.

Nail through 26 into back edge of maga-

zine rack shelves 8. Beveled cleats, magazine rack panels, hardwood edge and 1/4-round stop can be installed any time.

Leave space open behind panels 33 and 34, to run wiring. Cut, fit and drill your tuner control panel and install with diagonal masks 40 and partition 21.

Assemble record changer carriage after checking model you are installing to be sure you allow ample clearance for its enclosed mechanism and to pass center stile, with sliding hardware in place.

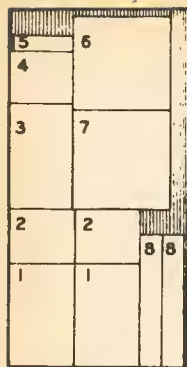
Cut, fit, drill and attach fixed shelf 28 below TV turntable. Face the upper surface with a disc of stiff plastic laminate to provide a smooth, hard track for rollers.

As a sub-assembly, join turntable top, bottom and end panels with segments from 2x2-inch corner posts, after checking fit in place and notching, drilling, mortising and installing rollers and pivots as shown. Attach strips shown on either side of the picture tube opening and blocks shown above and below. Lift sub-assembly over posts into socket for pivot tube.

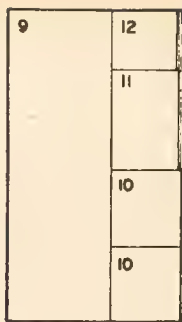
Drill socket in underside of top panel 9 for upper turntable pivot and attach top to posts, dividers and end 13. Nail front panel 3 in place; the amplifier can be installed through back before you install corresponding perforated panel.

Using 4d finish nails and glue, attach mitered hardwood edge around top and bullnose casing around base. These do not extend around left end in front elevation, since cabinet was built to project from wall.

Finish unit completely as recommended. Slip partitions in place and hinge doors. Move into position and slip TV set into turntable compartment through back. Install and connect speaker, amplifier, tuner and changer. Apply grill cloth with pre-finished molding. Attach back panels to aluminum angles for ventilation. •



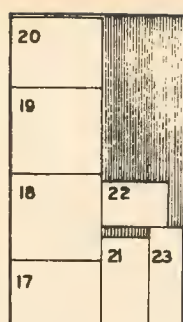
3/4" x 4'-0" x 8'-0"



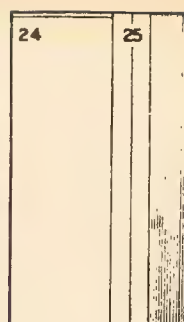
3/4" x 4'-0" x 7'-0"



3/4" x 4'-0" x 7'-0"

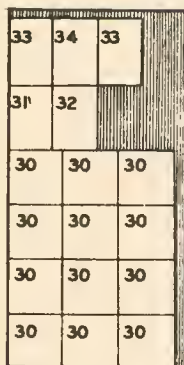


3/4" x 4'-0" x 7'-0"

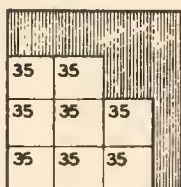


3/4" x 4'-0" x 7'-0"

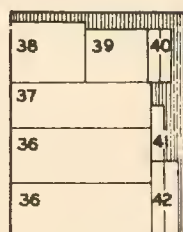
ALL PLYWOOD PLYPANEL A-D CUTTING DIAGRAMS



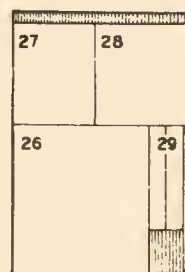
1/4" x 4'-0" x 8'-0"



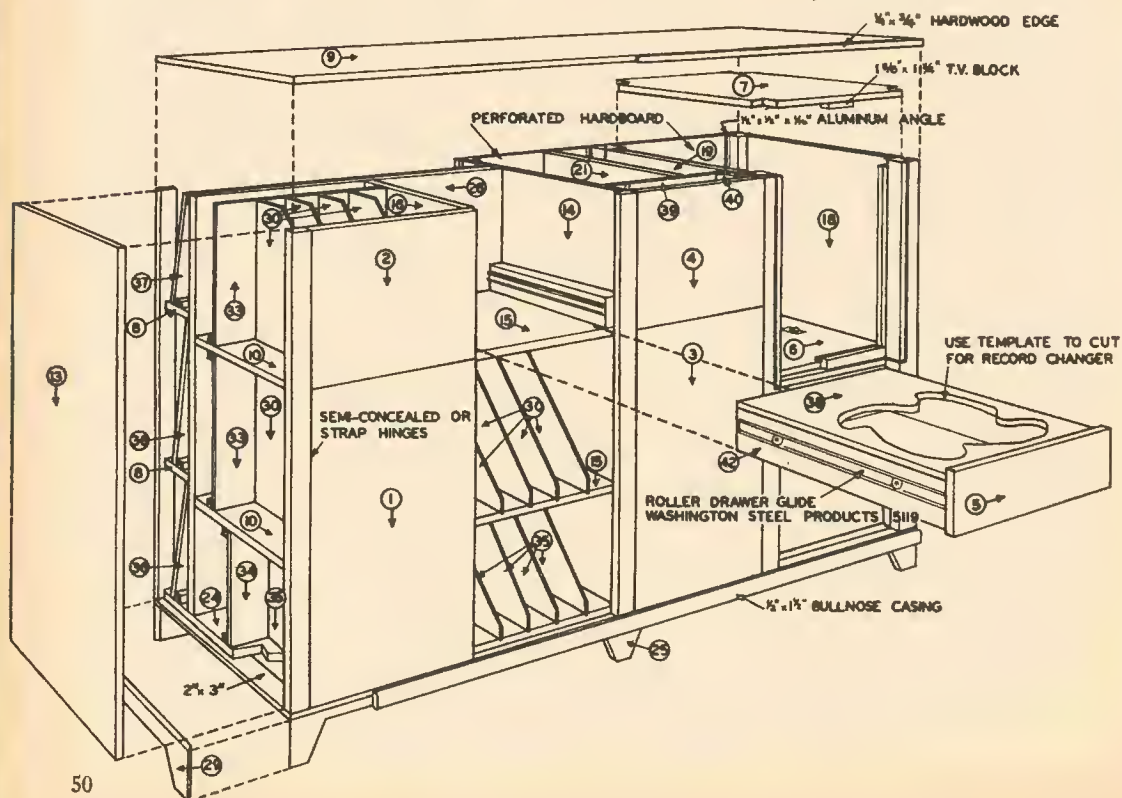
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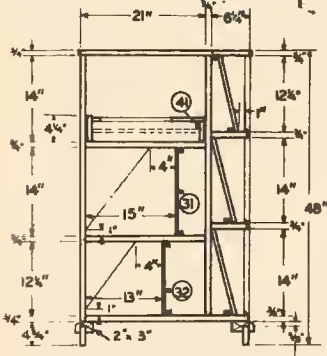
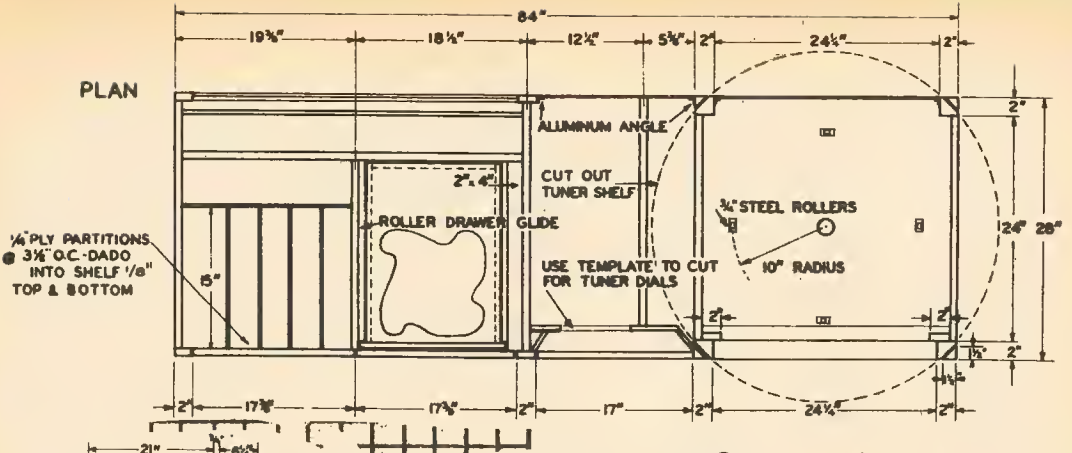
3/8" x 4'-0" x 5'-0"



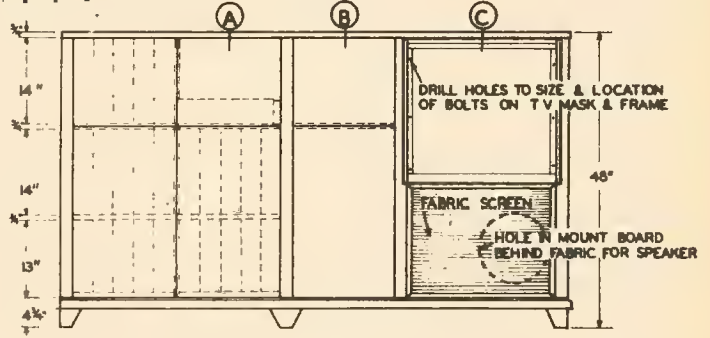
3/4" x 4'-0" x 6'-0"



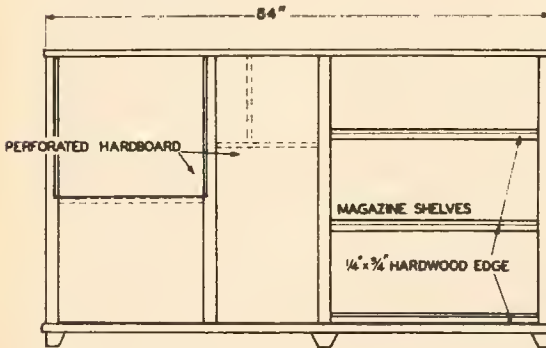
PLAN



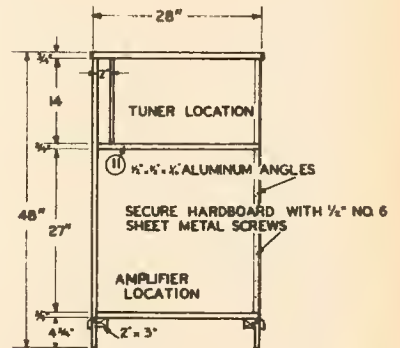
SECTION A



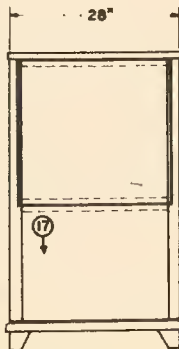
FRONT ELEVATION



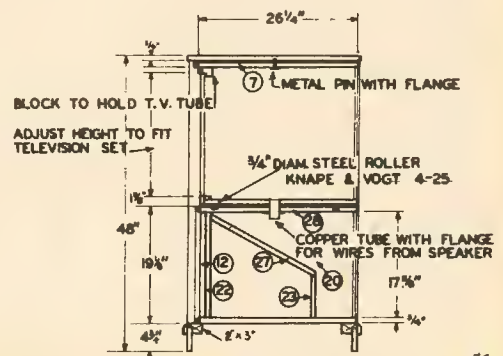
REAR ELEVATION



SECTION B



RIGHT END



SECTION C

collapsible coffee table

Make it and a matching table lamp from one piece of plywood

A SINGLE 2x4-foot "handy panel" of $\frac{3}{4}$ -inch plywood makes not only this palette-shaped coffee table, but the modern lamp as well. Even the table legs are cut from the same piece of plywood. The only extras you need are three $1\frac{1}{2}$ -inch butt hinges for the folding legs of the table, and a standard socket, plug, mounting nipple, and cord for the lamp. Total cost of both table and lamp (without shade) was \$4.69. The shade illustrated cost \$1.19.

Although you can do the job in an afternoon with ordinary hand tools, using a compass saw to cut the curves, one of the new workshop type portable saber saws lets you cut out all the parts in less than half an hour. (The one used in the photos is a Whiz Saw, designed by Forsberg with feminine workshoppers in mind—it's about the size, shape, and weight of a portable kitchen mixer, and it's as easy to use. Just switch it on and push it along the line to be cut, curved or straight.)

Your first step is copying the squared drawing on wrapping paper, using four-inch squares. Don't worry about exact-

ness here. If your outline is a little bumpy just smooth it out freehand. The hole in the tabletop is five inches in diameter to fit the bowl shown in the finished photo, but you can vary this to fit any bowl you happen to have that's near this size. The easiest way to outline the hole is by sticking an icepick through the center of the circle on the pattern. Then draw the circle on the plywood with a compass. If you're using a compass saw (hand tool) you'll have to bore a hole inside the circle to start your saw cut. With the little saber saw, start as shown in photos, without boring a hole.

The legs are cut over-length, as shown on the squared drawing, in order to allow for squaring the wide ends and trimming off the points to bring all three to approximately 16-inch length. Their outward angle holds them firmly in position when the table is in use. When folded flat against the underside of the tabletop they let you store it in the back of a closet or even hang it on the wall as a free form, if your decor is modern. •

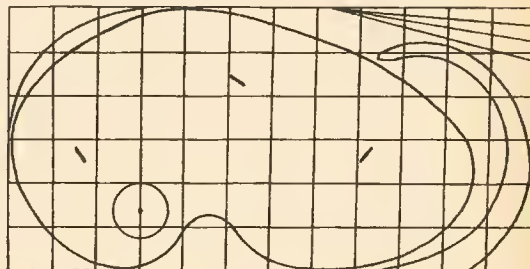
MATERIALS NEEDED for this collapsible coffee table are shown in the photo below: a 2x4-foot panel of $\frac{3}{4}$ -inch plywood; lamp socket with switch; three $1\frac{1}{2}$ -inch butt hinges; lamp cord; snap-on plug for cord.





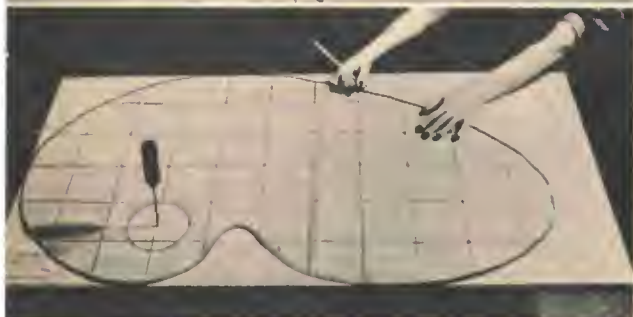
COFFEE TABLE is handsome piece of furniture. If you want surface veneer of pine or birch rather than fir, you probably can't buy it in 2x4-foot handy panel size, but many lumberyards will cut a two-foot end off larger panel (as long as remainder is saleable size). Here's what it looks like in birch, cut from end of larger panel. Finish is three coats of spar varnish for a surface that won't be stained by spilled beverages, hot or cold. Plywood edge is trimmed with stick-on edging. Bowl fitted into hole holds fruits, nuts, candy. Bowl must have outer lips rimming it, so that it can rest on edge of hole, as shown in photo above.

TO MAKE full-sized pattern for lamp and table parts make freehand approximation of this drawing on large sheet of wrapping paper, using four-inch squares. Draw freehand outline so it cuts through large squares at about the same points as small outline on this drawing. Upright of lamp is at right, table legs at upper right, halves of lamp base at left corners. Heavy short lines in squares show position of leg hinge pins when legs are attached to tabletop. Draw the outline very neatly.





FOR FAST JOB, a little workshop type portable saher saw cuts out all the parts in half an hour. It weighs about same as kitchen mixer shown above it, cuts wood, metal, plastic. With special untoothed blades it can also cut foam rubber, leather, or a frozen steak. Cuts through a 2x4 in seconds.



FIRST STEP: Draw enlarged outline of tabletop on wrapping paper, using four-inch squares. Draw curved line so it cuts through large squares the same way as outline on small squared drawing. Cut out outlined tabletop pattern and trace around it with soft pencil directly on the plywood piece.



TO CUT OUT tabletop simply guide saw along pencil line as shown here. If you're sawing it hy hand, use a compass saw.

TO CUT OUT circular hole, stand saher saw nose down, as shown, with front of foot plate resting on wood and tip of saw blade resting on wood. Switch it on and gradually ease blade into wood by tipping hack of saw slowly down toward normal position. Blade cuts all the way through wood.



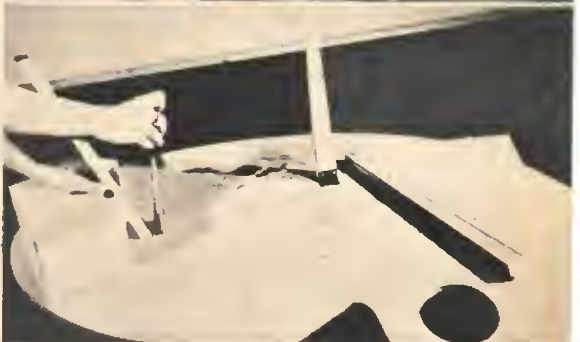
WHEN BLADE has cut through and foot plate of saw is flat on plywood surface, simply swing saw around as shown, to cut out complete circle. It's only saw that can do this job without bored hole to start from.



FIRST PARTS cut from leftover plywood (after cutting out tabletop) are the table legs. If you use fine-toothed blade on saber saw, the cut edges will be satin-smooth, require no sanding. If you're working with hand tools you can use a cross cut saw for this part of job as leg edges are straight.

TO SQUARE wide ends of legs, draw line down center first, then draw line across it at right angle. You can use corner of sheet of typewriter paper as right-angle guide. Angle of leg tops is drawn by measuring down $\frac{3}{8}$ inch on one side, drawing angled line as on center leg in photo. Set leg on edge, run saw across it along line, as at top. Use thumbtack (center) to level footplate of saw.

ATTACH legs to underside of tabletop with butt hinges, locating them as shown on squared drawing. Important: try them in folded position before fastening to make sure they don't extend beyond edge of tabletop. Use $\frac{1}{2}$ -inch or $\frac{3}{8}$ -inch flathead screws to make sure tips don't go through tabletop.



WHEN TABLE is not in use and you wish to store it away and save space, simply turn it over, and fold the legs up against the bottom, as shown here. Entire unit can be stored easily and simply this way. If closet is crowded, you can hang table on the wall, use it as a free-form wall pattern.



SECTION left over after cutting out legs, forms up-right of lamp. Cut out the outline from squared wrapping paper and trace around it carefully.



TWO HALVES of lamp base are alike, made from cut-off corners of other end of plywood panel. For perfect match, clamp two cut-off corners together.



HALVES of lamp base are nailed, glued with household cement (like Duco) to the bottom of up-right, one on each side. Allow hour for hardening.



WHEN HALVES of base are firm, stand lamp with upper end supported, bore hole for threaded nipple for socket. Hole is 1½ inches from upper end.



INSERT threaded nipple with nut on top. Then thread the cord through it, as shown. Socket has been attached to cord before insertion is made.



TIGHTEN nut and draw cord taut down back of lamp upright, anchoring near base with an insulated staple. Then paint cord to match color of lamp.



COMPLETED lamp with conical aluminum shade is modern in form. You can make the shade or use a standard Kodaflector bought at photo shop, as has been done in photo above. Lamp sets on table.

Tips on Plywood Edge Treatment

As the saber saw leaves the cut edges of the plywood smooth they may simply be given a natural finish, if desired, after wiping on a little filler to take care of any prominent end grain that might otherwise prove overly absorbent in finishing.

If you prefer to conceal the ply edges you can apply any of the stick-on edgings now available, running the edging all the way around the table. If you do this it will be best to start so that the joint in the edging will occur on the inside curve near the hole, as it will show the least at that point.

A third treatment calls for cutting the table from the panel with the saw tilted to produce a bevel. To do this, simply cut a wedge-shaped piece of wood the size of the saw's foot plate, with a slot for the blade to pass through. The wood wedge should be attached to the foot plate so as to tilt the blade sideways at about 30 degrees. Fasten the wedge to the foot plate with a flat head bolt running upward through a hole drilled in the plate, and countersink the bolt head flush in the wood wedge. (The hole will prove handy for other adaptations, such as wood shims to control depth of cut, etc.) Mount the wedge so that the blade cuts with a bevel inward at the underside of the tabletop. Beveled in this manner, the plies of the edges are not readily apparent.

kneeling table

It changes from a dining room table to a coffee table

HERE'S a table to build that will serve you full time—and then some. It is a table that stands to full dining or serving height when you need it. Between times it bends its knees to become a coffee table; and does this, moreover, without losing its graceful lines.

There are no gears to shift, no pins to pull, no clamps to loosen, no parts to remove. As you can see from the photographs, it folds from one working position to another with no ado and in a matter of seconds.

You can build it in small scale for serving duty where space is limited. For dining, make it as big as you like. The

photographs show a five-footer that is right for buffet serving, large enough for small-family or supplementary guest dining. The slight modifications necessary for making it wider or narrower or longer are indicated at the right.

Lumber and finish are up to you. Use any kind of plywood. Used here is 1¼-inch shop-grade pine for the top. For the legs we chose stout cheap Douglas fir because it is easily had in the 2x3 lumber needed.

If you use pine or fir, by all means give it a wire-brush finish. Go over the legs and upper surface of the top with a wire brush or scratch brush until you get a texture you like. Then apply a coat of white resin

HERE'S the kneeling table, raised to height of 30 inches, for buffet-dinner serving or dining use.

EACH pair of legs, hinged as unit, is swung into second position to raise table to full height.





USED as a coffee table, the kneeling table is just the right height for use with a chair or couch.

sealer (such as White Rez), wiping it down with a rag after a few minutes. Repeat this process, after the first coat is dry, but this time use White Rez tinted with raw umber. Finish with one or two coats of clear resin sealer. If this gives more gloss than you like, rub down the final coat with powdered pumice in oil, or glue up hardwood to make the top, using walnut, oak, Philippine mahogany, cherry, or some other wood of your choice. Give it a stained or bleached finish, or simply use water-white lacquer or synthetic varnish.

Material you'll need to make the table as shown here is: top, $1\frac{1}{4} \times 22 \times 60$ inches; 18 feet of standard 2×3 , or other lumber about $1\frac{5}{8}$ inches thick and $2\frac{5}{8}$ inches wide; 38 inches of piano hinge $\frac{5}{8}$ inch or wider, with screws. •

HINTS . . .

If you make a table with a top narrower than 22 in., simply make the two crosspieces as much shorter than the dimensions given for them.

If you make a wider table, increase the length of the crosspieces by about half the amount given.

For a shorter table, you can follow the directions exactly. Make the top somewhere between 4 and 5 feet long.

For a longer table—5 to 6 feet in length—you can follow the instructions exactly. But you'll get a better balanced coffee table if you move the hinge points further apart so they are about 14 in. from the ends of the table.

CUT stock $1\frac{1}{2}$ in. thick and 2 in. wide into 10 pieces. Make four long legs, like one at bottom in photo below, by setting miter gauge at 80 degrees and cutting to length of 29 in. With same 80-degree setting, make four legs 14 in. long. Then set gauge back to regular 90 degree cut-off and make one piece 17 in. long and one $20\frac{1}{2}$ in.; these are the crosspieces. Line up the four long legs, with two of them upside down so that their angle cuts do not parallel those of the first two. With a short leg as guide, mark a line on each (as shown in photographs) parallel to the end and at a distance from it equal to the width of short leg.

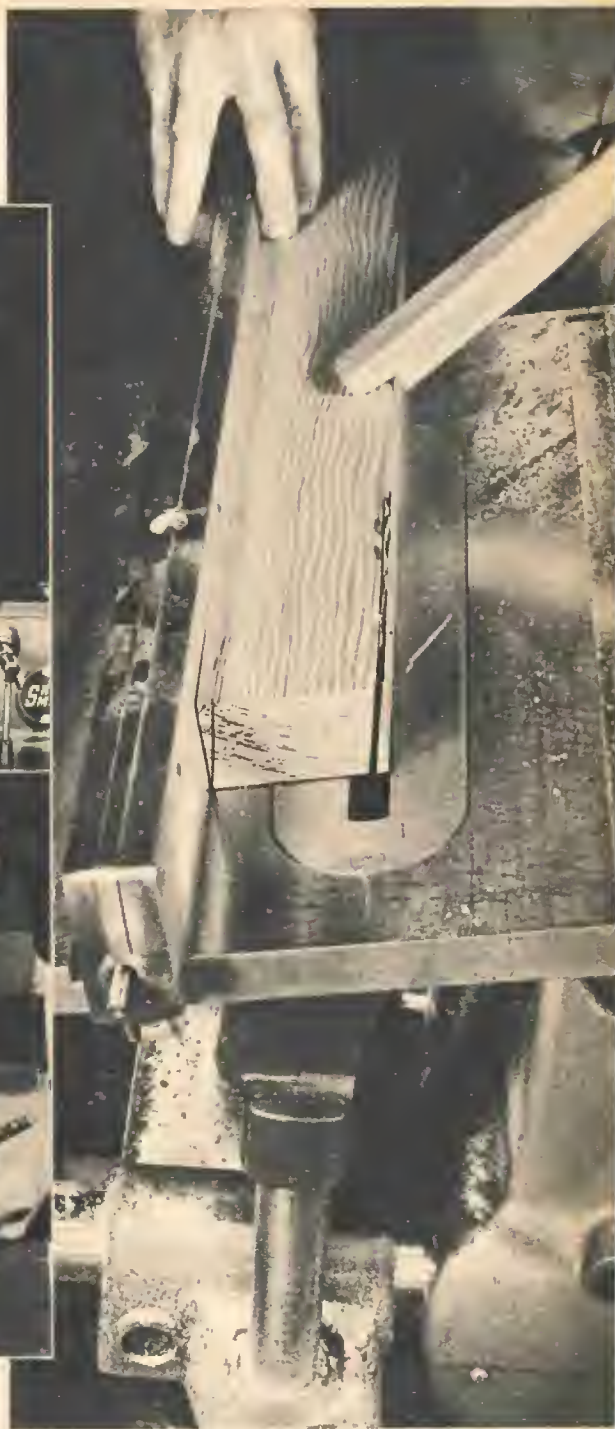


MARK the opposite end of each short leg for rabbeting on the opposite side—like this. But this time hold the marking piece on edge so rabbet will be only $1\frac{1}{2}$ in. wide. Complete the joint as before, removing stock to half the thickness of the lumber. Do this to all four short legs. Drill two screw holes at each end of each short leg. Space the holes in a staggered pattern as shown in the photograph. (For a suggestion about treatment of screw holes, see Photograph 11. It's the photograph on top of page 63, shows screw plugs.

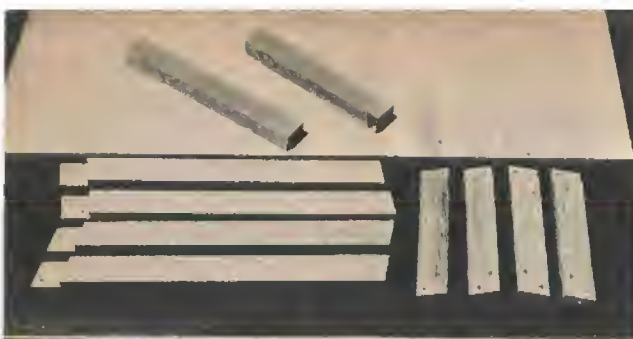
HALF-LAP joint long legs to short legs. Do this by removing stock to the line, cutting exactly half way through the leg and doing the same to the short legs. Rabbet the other end of each short leg also, but on the opposite side. Then make marking for this cut.



PLACE a short leg on each of the two crosspieces and trace a pair of lines like this. Make each line begin at a corner of the crosspiece. Shift position of leg between drawing first and second line to do this.



BEVEL the two crosspieces to these lines; Do this with plane, jointer or saw. With saw, use bevel setting of 10° .



MAKE a top for your table. This can be a single piece of wide lumber or can be glued up from plywood stock. Make it 1½ in. thick, 22 in. wide, 60 in. long. You'll now have completed the pieces shown in photo at the left: top, two cross-pieces, four long legs, four short legs.



NOW glue and screw each short leg to one long leg, to give the set of four leg assemblies shown here. Note that two assemblies are the opposite of the other two, that angles formed by the legs in each case are larger than right angles.



FASTEN each pair of legs to one of the crosspieces, using glue and two 2 in. No. 12 flathead screws at each joint. Note how workman sets the crosspiece back an amount equal to the thickness of the barrel of the piano hinge.

THIS IS an optional touch for a neat finish to your job. When drilling screw holes, first counterbore to a depth of $\frac{1}{4}$ in. with a $\frac{1}{2}$ in. bit. After driving screws, cover heads with a plug or bit of $\frac{1}{2}$ -in. dowel. Glue it in and then sand flush with surface. The screw heads that would show enough to make this particularly worth while are those where short legs join beveled crosspieces. Do a neat, tidy job.



ANOTHER easy way to position the leg parts on the under side of the table top is by first tying them together with twine as shown. Then center the whole business by measuring from ends and sides.



CUT OFF lengths of continuous hinge to same lengths as the crosspieces. Fasten to beveled pieces and under side of top. Use only three screws in each leaf of each hinge. Remove twine and test action of legs, then put in other screws.



ROUND OFF sharp edges and corners, and sandpaper the wood clean and smooth. Table is now ready for finishing.





INDOOR PROJECT No. 12

step caddy

This three-step homemaker's
aid makes it easy for you
to reach high places
without any physical pain

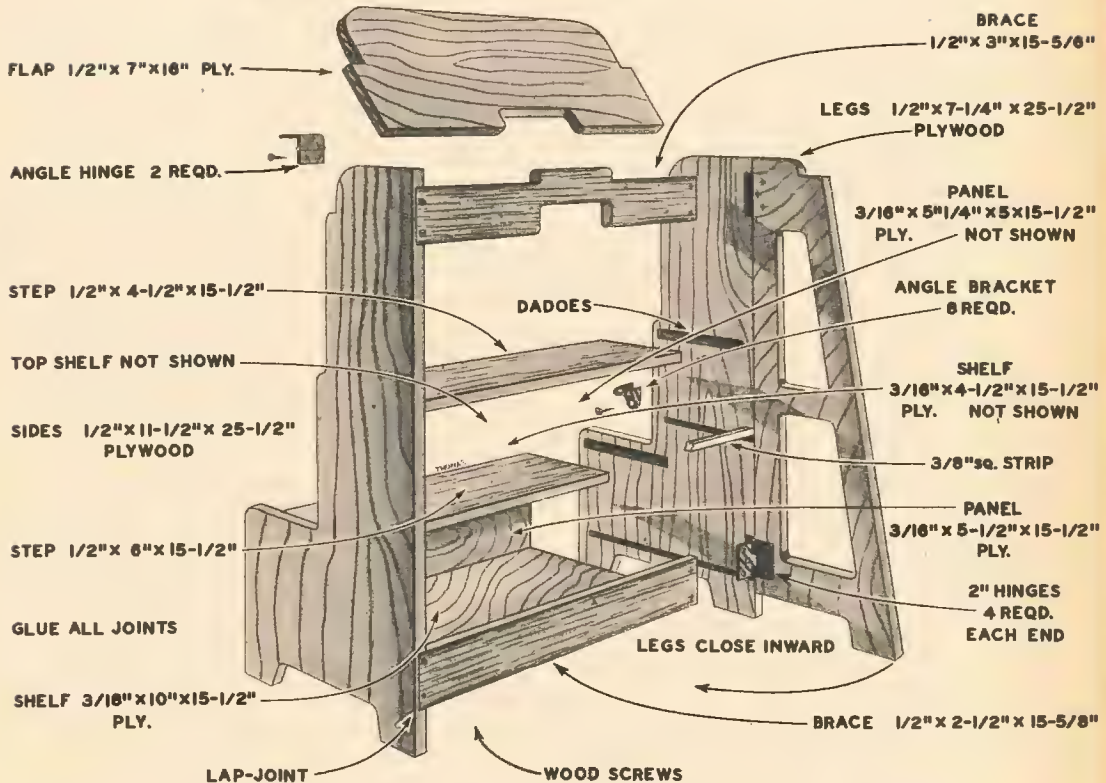
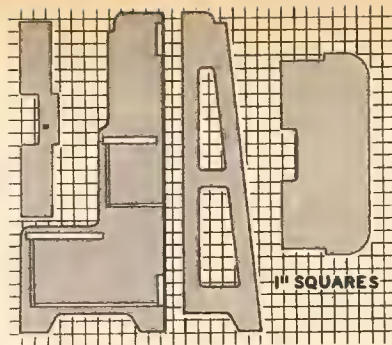
THERE'S hardly a home where this simply constructed step caddy won't prove useful, whether it be used to reach high shelves in modern overhead closets, dusting the ceiling, or hanging curtains and drapes. It is also handy when washing and cleaning lower windows of a home from the outside.

First step in constructing the caddy is to draw a grid of one-inch squares on which you can scale off the patterns for the various parts, as shown in the accompanying drawing. Make the patterns out of paper and merely superimpose them on plywood panels. Draw the pattern outline on the plywood with a pencil, and then it becomes an easy matter to cut the plywood to desired shape and size. Note that 3/16-in. plywood is used for some parts, while others call for 1/2-in. stock (see drawing).

The two lower shelves of the caddy are boxed in on the front side, while the rear edges are fitted with bracing strips, making it possible to store a few small tools in the space between steps without danger of their falling out when the caddy is carried by its handle. The triangular-shaped back leg sections are hinged so they can be folded back when the caddy is carried.

In making this project, as in making all the projects in this book, study the diagram carefully before undertaking any construction. A few extra minutes spent studying the diagram can mean the difference between a good job and a bad one; also the difference between time well spent and time wasted, not to mention the lumber and hardware involved.

The photos shown on this and the opposite page show how the step caddy works. •



THE TOP PIECE is attached with angle hinges which enable it to be swung in a 180 degree arc, permitting caddy to be used as step stool or chair.

WITH THE TOP PIECE in the seat position and the bracing legs folded back, the step caddy can be conveniently carried simply by grasping handle.





THIS couch-bed is very easy to make, very comfortable to use. It matches the Easy Chair which is next project in book.



TO MAKE into bed, just lift off the back of couch-bed and it becomes a comfortable sleeping unit, as photo left shows.

couch-bed

A space-saving, double-duty unit designed especially for small apartments

THIS couch-bed was designed to match the Easy Chair, which is the next project in this book. You'll find the making of it similar. The only difference is in the length of some of the parts and in the placing of some of these parts.

Arms for this couch, if you wish to put arms on it now or later, are exactly the same as for the Easy Chair. Buy the materials listed for arms under the Easy Chair section. Materials needed for couch base, springs, back and upholstery are at the end of this story. •

CUT two boards $1\frac{1}{2} \times 29$ inches and two $1\frac{1}{2} \times 72$ inches. Rabbet both ends of 72-inch pieces $\frac{1}{2}$ inch deep and 1 inch wide. Drill $\frac{1}{2}$ -inch holes through these rabbets and into ends of 29-inch pieces for $\frac{1}{2}$ -inch dowel joints. (Same as Easy Chair.) Bore $\frac{1}{4}$ -inch holes in the 29-inch pieces for arms.

ASSEMBLE this frame with glue and $\frac{1}{2} \times 1\frac{1}{2}$ -inch dowels. Make two pieces of $\frac{3}{4}$ -inch material, 2×70 inches and two, $2 \times 27\frac{1}{2}$ inches. Glue and nail these to the inside of the assembled frame, $\frac{3}{4}$ inch from top edge. This top edge is the one nearest the bolt holes for the arms. On the following six pages you will find further instructions.





IN ONE 72-inch side of this frame bore $\frac{1}{4}$ -inch holes $12\frac{3}{4}$ inches and $15\frac{1}{2}$ inches in from each end and $1\frac{1}{4}$ inches in from each side as shown here. These holes are for bolts to hold back supports.



FROM 2x2-inch stock turn six tapered legs. (Same as for Easy Chair.) Make three boards $\frac{3}{4}$ x5 or $\frac{3}{4}$ x6 by 27 inches. Bore one-inch holes in the center of these boards one inch in from each end. Glue and wedge leg dowels into these holes. Fasten these assemblies to under side of couch base with glue and nails or screws. Place one pair at each end and place the third pair in the center of base.



MAKE two back supports $1 \times 3\frac{1}{2} \times 22$ inches. Clamp one end of each $12\frac{3}{4}$ inches in from each end of the couch on the side you have drilled for the back support bolts. Mark bolt holes in the frame on to the supports. Drill these holes and bolt supports to frame with $\frac{1}{4}$ x3 inch carriage bolts. Heads of bolts go on outside of supports, as the workman shows.



MAKE two 2x4's $29\frac{3}{4}$ inches and two 2x4's $71\frac{1}{4}$ inches. Rabbit the ends of each of these for half-lap joints. Assemble this frame with glue and nails. Make sure nails are no closer than $1\frac{1}{4}$ inches to outside edge of frame, as shown here.

CUT a rabbet $\frac{3}{4}$ inch deep and 1 inch wide around the outside edge of this frame, as shown in the photo at right. Workman here is using a multi-purpose power tool to do this very simple job.



IF YOU use no-sag springs, start them $1\frac{1}{2}$ inches from each end and space them $4\frac{1}{2}$ inches apart the length of the frame. For webbing, use five strips lengthwise, and as many as you can get $1\frac{1}{2}$ inches apart crosswise. Attach springs and webbing securely to frame.



PUT this spring frame on the couch base and staple or tack two layers of plastic screen over the springs. If you use webbing, you can eliminate this covering which is to protect foam rubber. Take your time doing this job and do it carefully. It's a vital part of construction.





CUT one panel of $\frac{1}{4}$ -inch plywood $11\frac{3}{4} \times 72$ inches; one 12×72 inches and two $5\frac{1}{2} \times 11$ inches. Make a board $\frac{3}{4} \times 2\frac{1}{2} \times 72$ inches; three tapered boards $\frac{3}{4} \times 4\frac{1}{2}$ inches one end and $2\frac{1}{2}$ inches at other end $\times 11$ inches; and four pieces $\frac{3}{4} \times 1 \times 11$ inches.



GLUE and nail the $5\frac{1}{2} \times 11$ -inch plywood to the $\frac{3}{4}$ -inch edges of the $\frac{3}{4} \times 1 \times 11$ -inch strips. Glue and nail these to the $11\frac{3}{4} \times 72$ -inch plywood, $11\frac{1}{2}$ inches from each end. Make ends flush with one side. Let $\frac{3}{4}$ inch of plywood stick beyond the other end.



GLUE and nail the straight side of one tapered board to each end of the above assembly and one in the center. Make wide end of boards flush with the same edge of the plywood as in previous photo. Take time, do each section of couch-bed carefully.



PUT the $\frac{3}{4} \times 2\frac{1}{2} \times 72$ -inch board across narrow ends of tapered boards. Fasten with glue and nails. Glue and nail the $\frac{3}{4}$ -inch lip of plywood to edge of it. Glue, nail 12×72 -inch plywood panel to open side of box. Next step: photo one, opposite page.



TEST this box to see if it will fit over the back supports of your couch base, as shown in photo below. If it fits, you are now ready to upholster your couch. This is shown in the following photos, which should be studied carefully for details.



CEMENT a band of tape around foam rubber cushion. Lay spring frame, spring side down, on cushion and staple or tack the tape to the edge of the frame. This is same operation shown in Steps 1, 2, and 3 of the Easy Chair, next project in book.



CUT a piece of fabric $41\frac{1}{2} \times 87$ inches and lay it with the texture side down on a flat surface. Place springs and cushion upside down on it. Let the fabric stick out evenly all around the cushion. Staple or tack one edge of fabric to spring frame.



AFTER you have stapled or tacked one edge of fabric to the rabbet of the spring frame, stretch the fabric and fasten the other side to the rabbet. Work from center of frame toward the ends. Fold corners toward ends of couch as shown in photo above.



FASTEN thick folds to rabbet with large headed tacks, as shown above. Then staple or tack the edge of the fabric to rabbet across end of the frame.



CEMENT two layers of foam rubber 1x12x72 inches to the slanting side of the back. Cement one layer 1x5x72 inches the length of the top, as shown here.



SPREAD out a strip of fabric 24x86 inches, texture side down. Lay the foam rubber side of the back on it. Pull one edge up over the top and staple or tack to plywood. Stretch fabric and fasten the other edge inside the lip of the box. Trim material to fit around partition in box, as shown in photo above.



PULL fabric up over the ends of the box. Staple or tack in place. Trim off surplus. Cut a piece of fabric 14x76 inches. Fasten this on the back with a 1-inch strip of corrugated cardboard. (See Step 16 of the Easy Chair.) Now make arms as shown for the Easy Chair. When that is done, couch is finished.



IF YOU wish to make half couches it's not quite the same as cutting a full length couch in two. Instead, it's rather like increasing the length of an Easy Chair. Turn to Step 1 of the Easy Chair and make the 21-inch parts 36 inches. Continue the assembly according to the Easy Chair photographs. When you come to Step 4 increase the length of the $\frac{3}{4}$ x2x17 $\frac{1}{2}$ inches to 33 $\frac{1}{2}$ inches. The 20 $\frac{1}{4}$ -inch 2x4 used for the spring frame should be increased to 35 $\frac{3}{4}$ inches. Use webbing for cushion support instead of no-sag springs. It will give you a flatter surface. When you cut the parts for the back, increase the length of the 21-inch plywood panels to 36 inches. Cut a full-length couch cushion in two for the pad. Increase length of 1-inch foam rubber for back to 36 inches. Fabric to cover cushion is 41 $\frac{1}{2}$ x51 inches, and the two pieces of fabric for the back are 24x50 inches and 14x38 inches. The arms are the same as for Easy Chair and couch. Put two on a half couch and you will have an ample love seat, as shown here.

MATERIALS NEEDED:

For The Base:

123 in. of hardwood 1x8 in.
53 in. of hardwood 2x2 in.
177 in. of fir or pine $\frac{3}{4}$ x5 in. or 6 in.
8 dowels $\frac{1}{2}$ x1 $\frac{1}{2}$ in.
4 carriage bolts $\frac{1}{4}$ x3 in.

For The Back:

A panel of $\frac{1}{4}$ in. plywood 2x6 $\frac{1}{2}$ ft.
72 in. of fir or pine $\frac{3}{4}$ x2 $\frac{1}{2}$ in.
45 in. of fir or pine $\frac{3}{4}$ x5 in.
Foam rubber 1x29x72 in.
Fabric 24x86 in.

For The Springs:

204 in. of 2x4
32 ft. of no-sag springs with clips and nails, or
70 ft. of 3 $\frac{1}{2}$ in. furniture webbing
17 $\frac{1}{2}$ ft. of tacking tape
Plastic screen 30x144 in. or burlap (for no-sag springs)
Foam rubber pad 5x30x74 in.
Fabric 41 $\frac{1}{2}$ x87 in.

Plus:

1 $\frac{1}{2}$ in. nails or No. 8 flothead screws, 1 in. blue loth nails, $\frac{3}{8}$ in. tacks or staples, glue and rubber adhesive.

easy chair

These detailed photos show how to make and upholster beautiful living room chairs



SIMPLICITY was sought when this easy chair was designed. It was to be an easy chair that was easy to make from frame to upholstery.

Only the legs, seat frame and back supports are made of hardwood (oak is used here). The rest of the lumber is $\frac{3}{4}$ -inch fir, $\frac{1}{4}$ -inch fir plywood and fir 2x4. For cushioning use foam rubber to get maximum softness. On one model no-sag springs were used and on another webbing to support the seat cushion. The webbing gave a flatter seat. The no-sag springs gave a seat with a high crown but somewhat softer. A plastic fabric was used for upholstery and its application was planned for a minimum of stitching. •

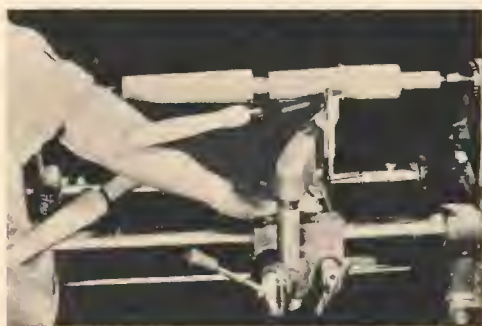


MAKE two pieces of hardwood $1 \times 3\frac{1}{2} \times 29$ inches and two $1 \times 3\frac{1}{2} \times 21$ inches. Rabbet both ends of 21-inch pieces $\frac{1}{2}$ -inch deep and 1-inch wide. Put the rabbet in the 21-inch pieces over the ends of the 29-inch pieces and bore $\frac{1}{2}$ -inch holes through joints for $\frac{1}{2}$ -inch dowels. Place holes $\frac{1}{2}$ inch from edge of frame. These $\frac{1}{4}$ -inch holes in the 29-inch pieces are for bolting on the arms. Bore three of them, $\frac{1}{2}$ inch from edge, one in the center and the other two 4 inches from each end. Do careful job when measuring.





ASSEMBLE the frame with glue, dowels and clamp until glue sets. Make two pieces of lumber $\frac{3}{4}$ x2x28 inches and two $\frac{3}{4}$ x2x17 $\frac{1}{2}$ inches. Glue and nail these around inside of this frame, $\frac{3}{4}$ inch from the edge to be used as the top edge of your chair seat. Then drill four $\frac{1}{4}$ -inch holes in one end of this frame for the bolts to fasten on the hack supports. Place two of these holes 5 inches from corner and 1 $\frac{1}{4}$ inches from bottom of frame. Place the other two 2 $\frac{1}{4}$ inches from corner and 1 $\frac{1}{4}$ inches from top of frame.



FROM the 36-inch piece of 2x2-inch stock, turn four legs 8 $\frac{3}{4}$ inches long. Taper them from 1 inch to a full 2-inch shoulder with a 1-inch dowel $\frac{3}{4}$ inch long cut above the shoulder. Make two $\frac{3}{4}$ x3 or 6-inch boards 19 inches long. Bore 1-inch holes in the ends of these boards 2 inches from one corner. Notch the center of leg dowels with saw. Insert leg dowels into these holes with glue. Drive wedge into slot in dowel.

AFTER you have made both leg assemblies, fasten them across the underside of the chair frame as shown. Use glue and nails or No. 8 flathead screws. To make the hack for easy chair, cut two pieces of stock 1x3 $\frac{1}{2}$ x22 inches for hack supports. Clamp one end of each of these pieces over two of the holes drilled in Step 5. Position piece 1 $\frac{1}{2}$ inches from corner. Mark holes through frame on to support. Drill the pieces and fasten to frame with 3-inch carriage bolts, as workman is doing in the photograph below.





CUT these four $\frac{1}{4}$ -inch plywood panels—one 12x21 inches; one 11 $\frac{1}{4}$ x21 inches, and two 5 $\frac{1}{2}$ x11 inches. Rip the $\frac{3}{4}$ x8x11-inch board diagonally from 2 $\frac{1}{2}$ inches along one end to 2 $\frac{1}{2}$ inches along the other and from opposite edge. Make a board $\frac{3}{4}$ x2 $\frac{1}{2}$ x21 inches and four pieces $\frac{3}{4}$ x1x11 inches. Nail and glue the two panels of $\frac{1}{4}$ -inch plywood 5 $\frac{1}{2}$ x11 inches to the four strips of wood $\frac{3}{4}$ x1x11 inches. Fasten plywood to the $\frac{1}{4}$ -inch edge as shown. Fasten the $\frac{1}{2}$ -inch plywood panel 11 $\frac{1}{4}$ x21 inches to these two assemblies with glue and nails. Place each assembly $\frac{3}{4}$ inch from end of plywood. Let ends of assemblies be flush with one side of plywood panel. Take your time in doing each step of this job; do neat, careful job.

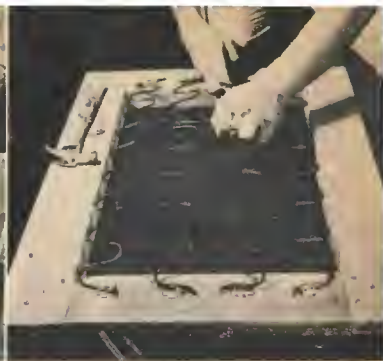
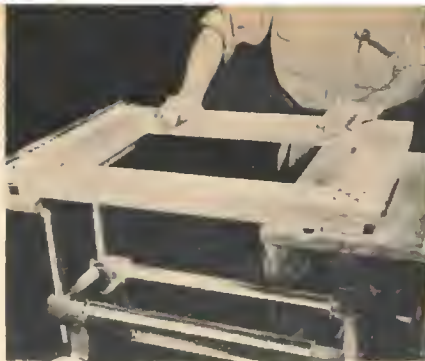


THE $\frac{3}{4}$ -inch lip at each end of the part just assembled fits over the straight side of the diagonally cut pieces made in Step 10. Nail and glue them into place with the wide end of the boards flush with the same side of the plywood as the assemblies in Step 12. Now the $\frac{3}{4}$ x2 $\frac{1}{2}$ x21-inch board can be glued and nailed to the 2 $\frac{1}{2}$ -inch ends of this assembly. Glue and nail the $\frac{3}{4}$ inch of plywood sticking up at the back to this board. Sand or plane the edge of this board to match the slant of the ends of this box.

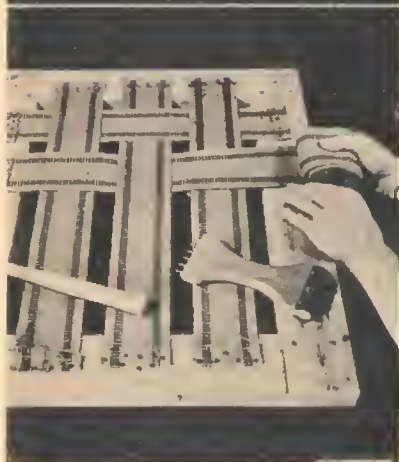
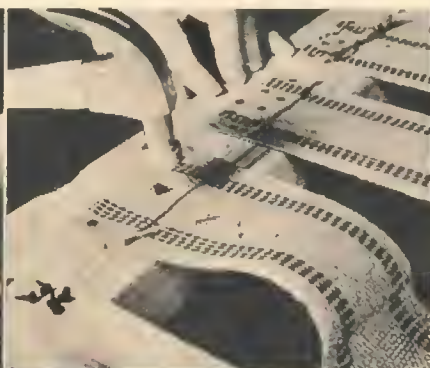
GLUE and nail the $\frac{1}{4}$ -inch plywood panel 12x21 inches to the open side of the box. Test to see that sleeves in box will fit over back supports of chair. To hold the springs for your easy chair, make 2x4's 20 $\frac{3}{4}$ inches long and two 28 $\frac{3}{4}$ inches long. Rabhet the ends of each for half-lap joints. Glue and nail these pieces together. Be very sure that the nails are at least 1 $\frac{1}{4}$ inches from the outside edge of the frame.



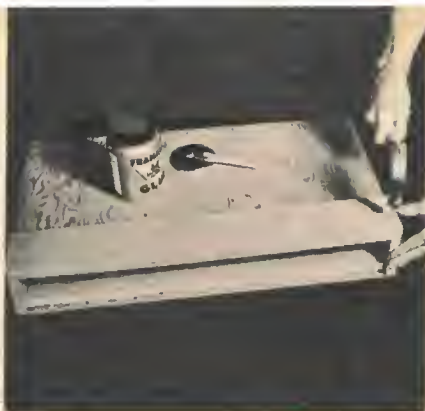
CUT a rabbet $\frac{3}{4}$ inch deep and 1 inch wide around the outside edge of this frame. Cut four no-sag springs 25 inches long. Put the outside two $1\frac{1}{2}$ inches from edge of frame. Space the other two evenly in between them.



COVER the springs with two layers of plastic screen, burlap or some other loosely woven material to protect cushion. If you use webbing, put three strips lengthwise of the frame. Double at least $1\frac{1}{2}$ inches at the ends and tack well. Stretch with webbing stretcher and tack. Cut off webbing at edge of frame. Fold it back over tacks and tack again, as workman is doing in the photographs shown below.



WEAVE in the cross strips of webbing as shown. Put five strips crosswise of the seat frame. Now comes the job of making arms for your chair. For one arm, make two pieces of 1x4 29 inches, two pieces $14\frac{3}{4}$ inches and one piece $27\frac{1}{2}$ inches. Cut two panels of $\frac{1}{4}$ -inch plywood $15\frac{1}{2}$ x29 inches. Glue and nail the ends of one 29-inch piece to the ends of the two $14\frac{3}{4}$ -inch pieces. Fasten the $27\frac{1}{2}$ -inch piece between the $14\frac{3}{4}$ -inch pieces $\frac{1}{2}$ inch from ends and flush with one edge, as workman is doing in photo above.



PUT the two 15½x29-inch plywood panels on this frame with glue and nails. Fasten the remaining 20-inch board to the outside of this box as shown. Be sure edge of board is flush with edge of plywood. Clamp the side of your chair frame to the last piece you put on the box. See that bottom edges and ends match. Then mark bolt holes in the side of the chair frame onto the box. Drill ¼-inch holes at these marks. Now make your other chair arm.



NEW plastic materials combine a cloth weave look with a surface that wears like leather and is easy to clean. Foam rubber gives your furniture a softness that used to require a complicated spring arrangement. Put plastic material and foam rubber together and you can have a perfect upholstery job.

A rayon-supported plastic (such as Boltiflex) is the best to use. It can be worked on the home sewing machine. Nylon thread should be used and the stitches lengthened to keep them from cutting the material.

However, it's not as easy to sew plastic materials on a sewing machine as it is ordinary cloth upholstery fabric. Shown here is a method that requires no sewing machine work, only a little hand stitching.

The photographs give you this method step by step. •

TO UPHOLSTER the cushion, use a 4½x20x30-inch foam rubber cushion. Brush a 1½-inch strip of adhesive around this cushion and let it dry until it won't come off on your fingers when you touch it. Wrap upholstery tacking tape around the cushion. Press the prepared strip of the tape to the cement strip on the cushion. Allow one inch of tape to stick out above foam rubber, as is shown in the photo below.



SET the cushion on plastic screen over no-sag spring frame, or directly on webbing, if you used webbing, and staple or tack tape to edge of frame. Cut a piece of fabric 36x41½ inches. Spread out texture side down on a flat smooth surface. Place cushion and frame upside down in the center of it. Pull one end of fabric up and staple or tack it to the rabbet at the end of the frame. Then stretch fabric and fasten to rabbet at opposite end of the frame.

FOLD corners along sides of cushion, as shown here. Fasten end of fold to rabbet with stapler, or tack to hold it in place. Pull the side in and tack with a large-headed tack. Then work toward the opposite corner fastening fabric in rabbet. The folds in the fabric at the sides will be hidden by the chair arms. This eliminates any stitching at all in the seat cushion, looks very neat.

TO UPHOLSTER the arms, cut a piece of 1-inch foam rubber 12x30 inches. Cover one side of foam rubber and the plywood on the side of the arm between the one by four and the top edge with one coat of adhesive. Let it dry until it won't come off to the touch. Then press the foam rubber on to the plywood. Compress edges so that the foam rubber is even with the edge of plywood. Apply adhesive to the top of arm and to a piece of foam rubber 1x5x30 inches. When adhesive is dry press foam rubber to the top of the arm. Do a neat job.

CUT piece of fabric 28x43 inches and lay it, texture side down, on a flat surface. Put foam rubber side of arm down on fabric. Allow even amount of fabric to stick out both ends. Pull fabric up over top of arm, staple or tack it to plywood. Stretch material and fasten other edge to inside of lip of box. Fold ends over, fasten them to plywood. Turn box with fabric side up. Trim off corner of fabric ¼ inch from arm.



FOLD fabric $\frac{3}{4}$ inch in and fasten the end to hold it until the remaining piece of fabric is put on. Cut a piece of fabric 18x31 inches. Fasten one edge of it 1 inch from top of arm with a 1-inch strip of corrugated cardboard. Then stretch fabric over plywood and staple or tack the edge to the inside lip of the box. Fold under ends, blind stitch fabric at top and back of arm to fabric at end. Use a curved needle and heavy nylon thread that matches material. Start the needle inside the gap between the two folded edges of fabric so that the knot will be hidden. After each stitch, pull the thread through tight. Start the next stitch in the underside of the opposite fold, not directly across from where it came out, but a little toward the already stitched part. This will give you a tight seam, which is just exactly what you want for a good fit.



TO UPHOLSTER the chair back, cut two pieces of foam rubber 1x12x21 inches and cement these one on top of the other to the slanting side of the back assembly. Cut one 1x5x21 inches and cement it to the top. The method of covering the back is the same as for the arms. Cut the fabric 24x37 inches and staple or tack on as shown here. Fold ends over and fasten and trim corners as in Step 10. Cut a piece of fabric 14x22 inches. Fasten one edge with a strip of 1-inch corrugated cardboard one inch from top of back.





MATERIALS NEEDED:

For The Frame:

- 6 ft. of 1x8 in. hardwood
- 3 ft. of 2x2 in. hardwood
- 7 ft. of 3/4x5 in. or 6 in. fir lumber
- 8 dowels 1/2x1 1/2 in.
- 4 carriage bolts 1/4x3 in.

For The Back:

- 22 in. of 3/4x5 in. fir or pine lumber
- 11 in. of 3/4x8 in. fir or pine lumber
- A panel of 1/4 in. fir plywood 24x26 in.
- Foam rubber 1x21x29 in.
- Fabric 24x37 in. and 14x22 in.

For The Arms:

- 20 ft. of one by four fir or pine
- Panel of 1/4 in. fir plywood 31 1/2x60 in.
- 6 carriage bolts 1/4x3 in.
- Foam rubber 1x34x60 in.
- Fabric 56x56 in. and 36x62 in.

For The Springs:

- 8 1/2 in. of fir 2x4
- 9 ft. of no-sag springs or 21 ft. of 3 1/2 in. furniture webbing
- Foam rubber cushion 4 1/2 in. or 5x20x30 in.
- 100 in. of tacking tape
- Plastic screen or loose fabric 30x42 in.
- Upholstery fabric 41 1/2x36 in.

Plus:

- 1 1/2 in. ring-borbed or screw type nails or No. 8 flothead screws 1 1/2 in.
- 1 in. blue loth nails or 3/4 in. ring-borbed nails
- 3/8 in. staples or carpet tacks
- A good glue, rubber cement and thread to match your upholstery.

PULL fabric over the cardboard and plywood and fasten it to lip of box. Trim fabric around the sleeves which fit over the back supports on chair. Blind stitch the top and back fabric to the fabric at the ends of the box as in Step 13. Now you can slide the back over the supports, hold the arms on with the 1/4x3-inch carriage bolts, heads to inside of frame, set the cushion into the seat, and your easy chair is ready for you to enjoy and admire.

THIS model of the easy chair was given wrought iron legs, and the fabric covering, the same as used above, was stitched on a home sewing machine. The material was sewed in pockets to fit the seat, arms and back. These pockets were pulled over the parts and stapled to the under side of the seat frame, to inside lips of the arm and back boxes.



ottoman and tray

Make it to match the
Easy Chair and Couch-Bed



THIS Ottoman gives you a chance to really relax in your Easy Chair. Cushion part is removable, thereby providing floor seat and buffet table.



THIS Ottoman will add comfort to the Easy Chair (described in the previous story), and give you extra seating on occasion. The tray is a plus feature. When serving guests, put the cushion on the floor for low seating and use the tray for serving and the tray on the Ottoman as a low table.

The frame and legs for the Ottoman are the same as for the Easy Chair without back supports. You will need to get a hardwood board 1x8x51 inches, and a hardwood 2x2x36 inches. A piece of fir or pine $\frac{3}{4}$ x5 inches or 6x84 inches will take care of the inside framing. For the tray you'll need a piece of $\frac{1}{4}$ -inch plywood 20x29 inches to match the hardwood. Use the same size cushion as you used for the Easy Chair. The upholstery fabric to cover one side and four edges is 41 $\frac{1}{2}$ x36 inches, with an additional piece of loosely-woven material 20x30 inches for the under side.

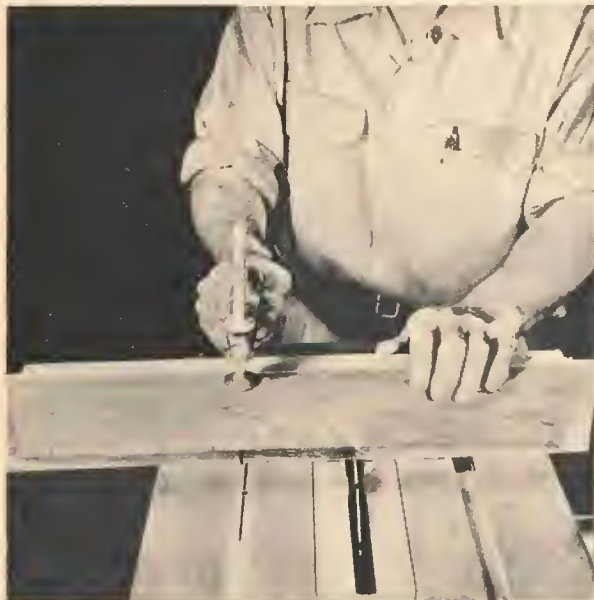
To make your Ottoman, combine the steps in the photographs showing you how to make the Easy Chair with the changes shown in the following photographs. •



CUT TWO PIECES of hardwood 1x3 $\frac{1}{2}$ x29 inches and two 1x3 $\frac{1}{2}$ x21 inches. Rabbet the ends of the 21-inch pieces $\frac{1}{2}$ inch deep and one inch wide. In one edge of all four pieces saw a rabbet the same size as you cut in the 21-inch pieces. Make this rabbet on the same surface of the 21-inch pieces as the end rabbets. Save the strips you remove.

IN THE rabbeted sides of the two 21-inch pieces make two saw cuts one inch deep. Make these cuts two inches from the center of the pieces, as the workman is shown doing in photograph below.

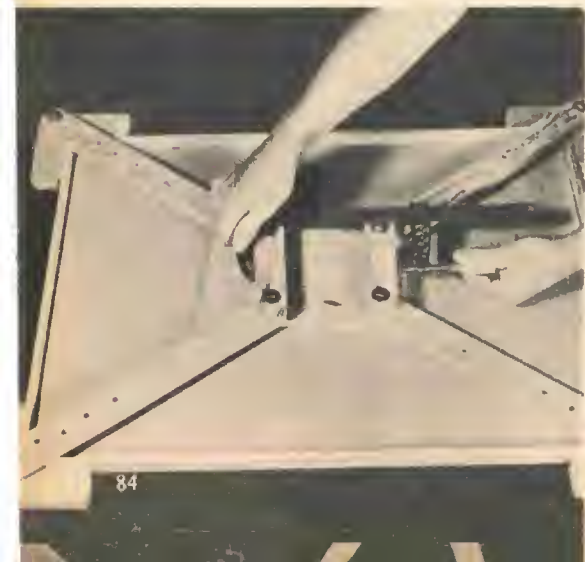
REMOVE the four-inch piece of wood between cuts. Take the piece out with coping saw or let saw table down on saw to remove it neatly. Don't throw these pieces away either; use them later.





BORE $\frac{1}{2}$ -inch holes in rabbets of 21-inch pieces and into ends of 29-inch pieces and assemble the frame with glue and $\frac{1}{2} \times 1\frac{1}{2}$ -inch dowels. Glue and nail $\frac{3}{4} \times 2$ -inch strips around the inside of this frame flush with edge or rabbet. Turn four legs, the same as for the Easy Chair, glue them into $\frac{3}{4} \times 5$ or 6×19 -inch boards and fasten these with glue and nails or screws to the bottom side of the frame. Now you are ready to make the tray out of the plywood, four strips and two blocks shown. Cut the plywood so that it will fit inside the Ottoman frame with a $\frac{3}{16}$ -inch space all around. Make a $\frac{1}{4} \times \frac{1}{4}$ -inch rabbet in the four strips. Miter the ends and frame the piece of plywood, fastening it into the rabbets with glue and $\frac{3}{4}$ -inch brads.

CLAMP this tray (as shown in photo below) until glue is thoroughly set. Then place tray in Ottoman frame and glue and clamp 4-inch blocks to it in notches in the frame. Remove the tray so that excess glue won't stick it to the frame. Sand the base and tray and finish it to match your Easy Chair and Couch-Bed.





IF YOU upholster the cushion with a plastic material, lay a $41\frac{1}{2} \times 36$ -inch piece over it wrong side up. Pinch together the corners and pin as shown. Compress the cushion slightly.



STITCH these corners on your sewing machine. Begin at the outside edge and end seam by running the stitching back an inch to secure the end, as shown.

TRIM OFF the corners. Turn this box right side out and force the cushion into it. On the uncovered side of the cushion lay a 20×30 -inch piece of loosely woven fabric and sew the edges of the plastic material to it. (If you upholster with cloth fabric you can make a boxed pocket to fit the cushion. Force cushion into it and sew up end.)





INDOOR PROJECT No. 16

upholstered dining chairs

They're easy to make and they'll add glamour to your dining room

IF YOU want really comfortable seating in your dining room, make several of these upholstered dining room chairs. You can make them with or without arms, as the drawings on page 88 show. Study these drawings carefully before undertaking either project.

Material needs for one chair include: 72 inches of $1\frac{1}{4} \times 3\frac{5}{8}$ lumber; a piece of plywood 16x24 inches, ten No. 8 oval head nickel $\frac{1}{4}$ -inch screws, a slab of foam rubber 1x16x40 inches, and a piece of fabric 24x44 inches.

Dimensions for actual pieces of the

chairs are given in the drawings on page 88. Actually you may vary these dimensions to suit whatever height and width of chairs you might desire. Construction, however, will remain just about the same.

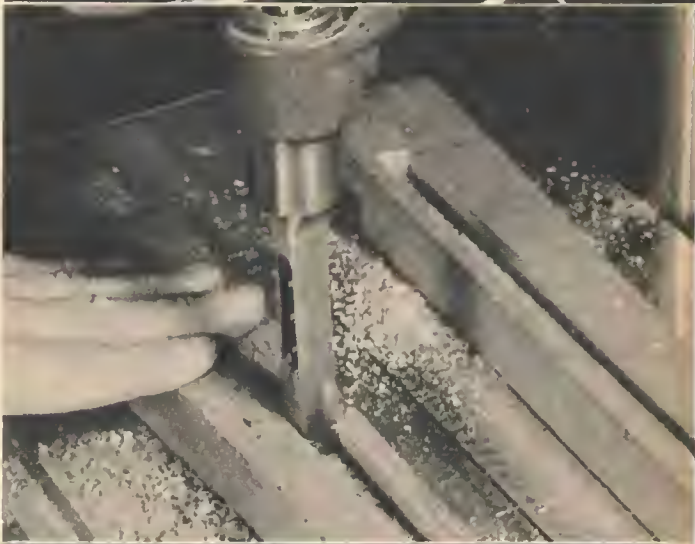
Photographs with this story show the various steps of construction, including the methods to be followed in upholstering the chairs. Again, study photos carefully before undertaking the job.

When chairs are completed, you will find that with or without arms, their comfort can be improved upon only by a good dinner. •

CUT a dado ($\frac{1}{2}$ inch wide and $\frac{1}{2}$ inch deep) $\frac{5}{16}$ inch from the tapered ends of the back and seat pieces. Start dado at narrow end of piece, and make it 16 inches long in the seat pieces, 8 inches long in the back pieces. Make the dado in the seat pieces on the opposite side of the lap joint; in the back pieces make it on the same side as the lap joint.



SQUARE UP ends of dados with chisel or mortising device, as workman is doing in photograph at the right. Handle tools carefully. Suggestion: check measurements from time to time to be sure you have not made some simple error.

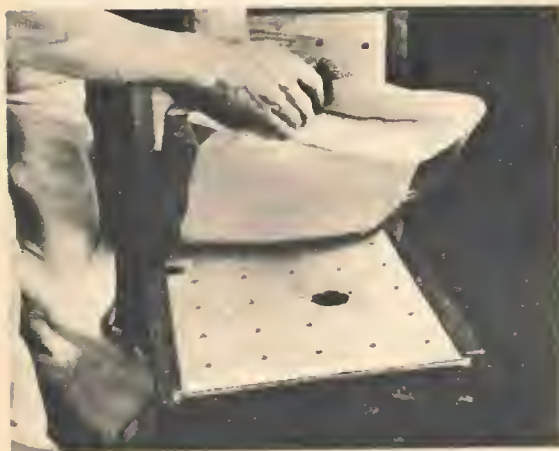


ASSEMBLE both rear and front legs to seat and back parts with glue and oval-head screws. Bore a pattern of $\frac{1}{4}$ -inch holes in the two panels of $\frac{1}{2}$ -inch plywood and glue these into the dado in the back and seat assemblies. The 8x18-inch and 16x18-inch panels are for the chair without arms, the 8x20-inch and 16x20-inch panels are for the arm chair.

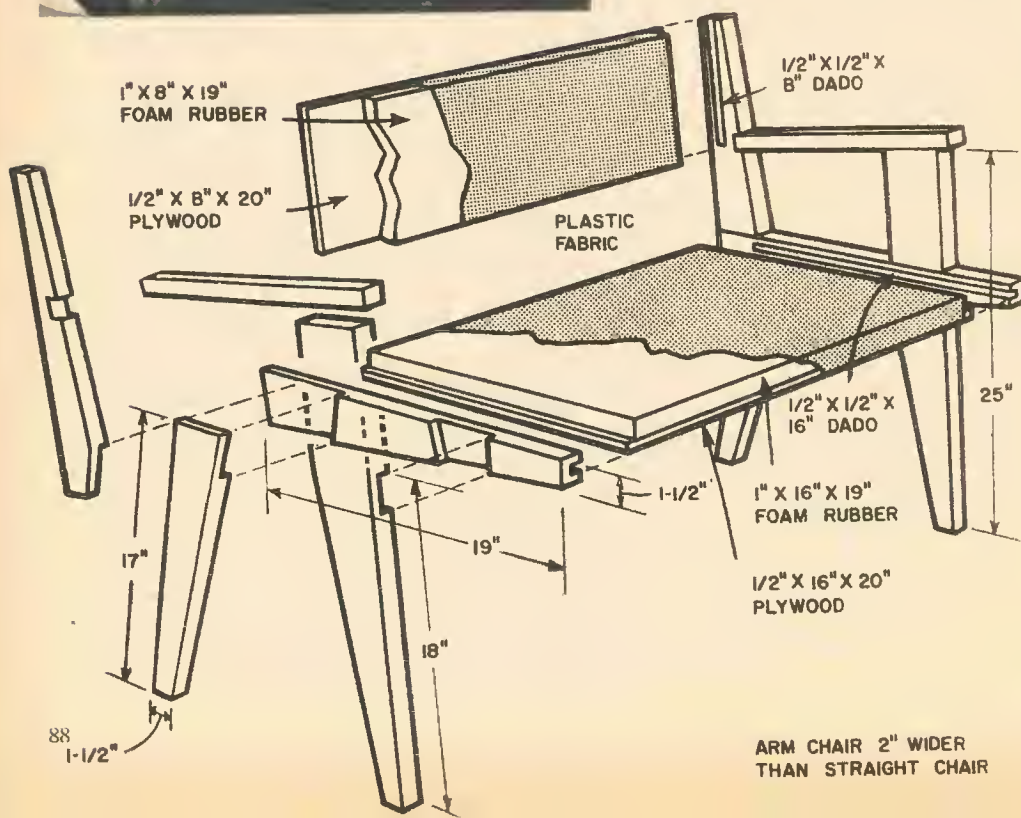
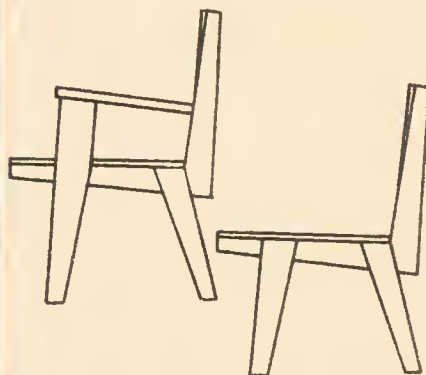




FOR the seat, cement together two pieces of one-inch foam rubber 16x17 inches. Take a 24x25-inch piece of fabric (plastic material used here) and cement two sides to the foam rubber as shown in photograph at left.



SPREAD cement along sides of plywood seat of chair and press cushion into place. Keep the open ends of the cushion to the front and back of the chair. Do a neat job.



ARM CHAIR 2" WIDER THAN STRAIGHT CHAIR

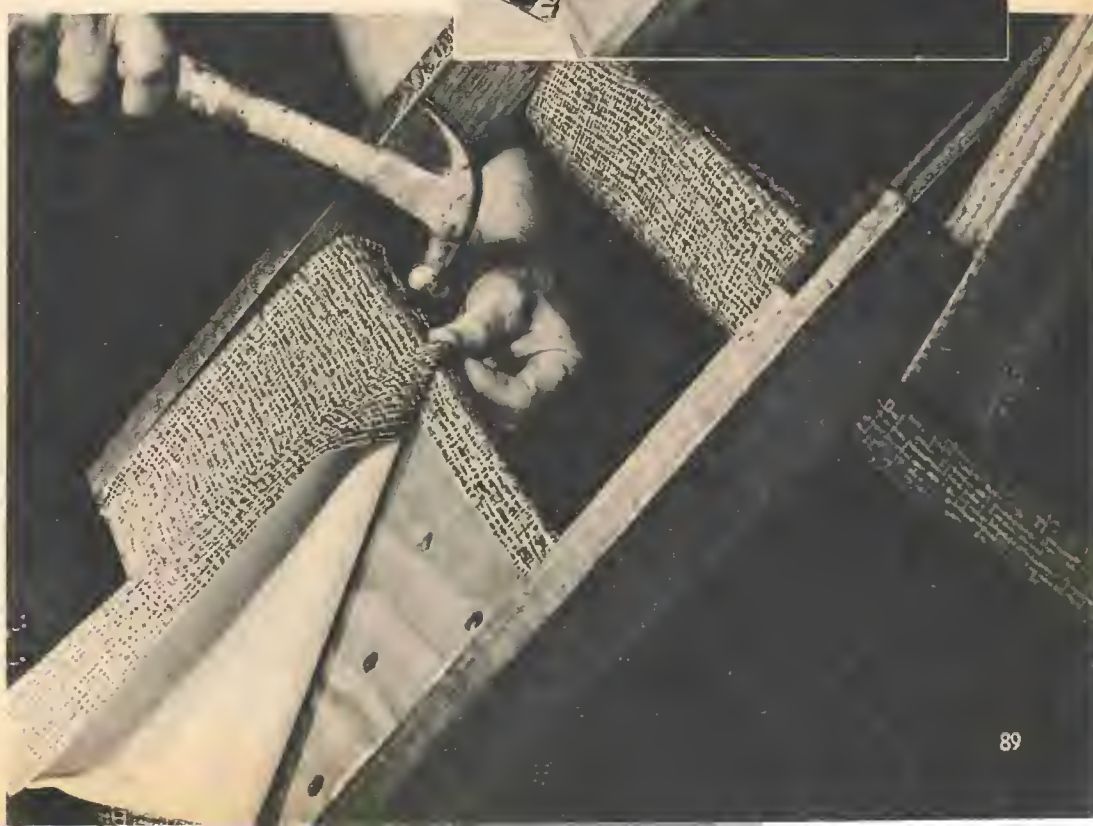
TURN chair upside down on a solid surface. Fold in corners of fabric neatly and staple or tack to under side of plywood seat. To upholster back, use only a one-inch layer of foam rubber 8x17 inches, but cut the fabric 20x26 inches. Place the foam rubber 1½ inches from one end of the fabric and fold the fabric over and cement it to ends of rubber. Apply cement to ends of plywood back and press cushion into place as shown.



ON lower edge of plywood, pull the 1½-inch open end of the cushion around and staple or tack it to the back side of the plywood.



FOLD in ends of long open end and pull it over plywood, tack it with round head upholstery tacks to lower edge. Apply a strip of cement to the ends of the plywood back to hold down the fabric. (When upholstering the armchair, increase the dimensions of the foam rubber and fabric by 2 inches in width over those for the chair without the arms.)





sewing cabinet

"Finger-tip" storage is the big feature of this easy-to-build household unit

USE a straightedge to lay out the fir plywood panels as shown in the cutting diagrams and parts schedule. Be sure to allow for saw kerfs.

Cut plywood parts to exact size with a table saw. In determining size of the cutout in sub-top, allow at least 1/4-inch clearance for the base of the sewing machine on three sides with adequate clearance at the power end for electrical connection. Locate cutout 6 inches from front edge and approximately 12 inches from right end. To provide rabbet for flush removable cover, make cutout 1/2 inch larger in counter top. Cut a hole in bottom "D" to allow for entry of electrical cord and in back "O" for wall plug. All cutouts can be made by drilling holes at corners and removing material with a saber saw or band saw.

Cut 5/4x2-inch blocking to length and apply to bottom "D" with 6d nails and glue. Similarly, fasten sub-top over, flush with edge of blocking. Position counter top on sub-assembly and drill holes near each corner for countersunk bolts. Insert bolts and then apply plastic laminate to counter top and removable cover. A saber saw with a special blade is required to remove plastic laminate for cutout. Make a rough cut first and then use a router with a carbobly bit to trim cutout. Similarly, trim outside edges of counter top and removable cover. Most plastic laminate applicators will do this job if these special tools are not available.

Bolt well assembly to counter top as shown. Then apply 1x2-inch door stops to left end and counter top. Nail and glue brackets and cleats in position and install

shelves on inside of each end standard. Use 6d finish nails and glue to fasten back and ends in place. Nail bottom edges to floor with 1x2-inch cleats, being careful to keep cabinet assembly square.

Cope bottom shelf for caster leg, and fasten to end standard. Assemble standards and shelves of storage door. Apply 1/4-inch plywood back and face frame cutout. Drill holes for dowels and then nail and glue spool rack in place, as shown.

Hang door using loose pin hinges. Remove pins, and lay door flat to fasten shelf assembly with screws through 1/4-inch back. Install caster on 2x2-inch leg. Then apply hardwood counter edging. •

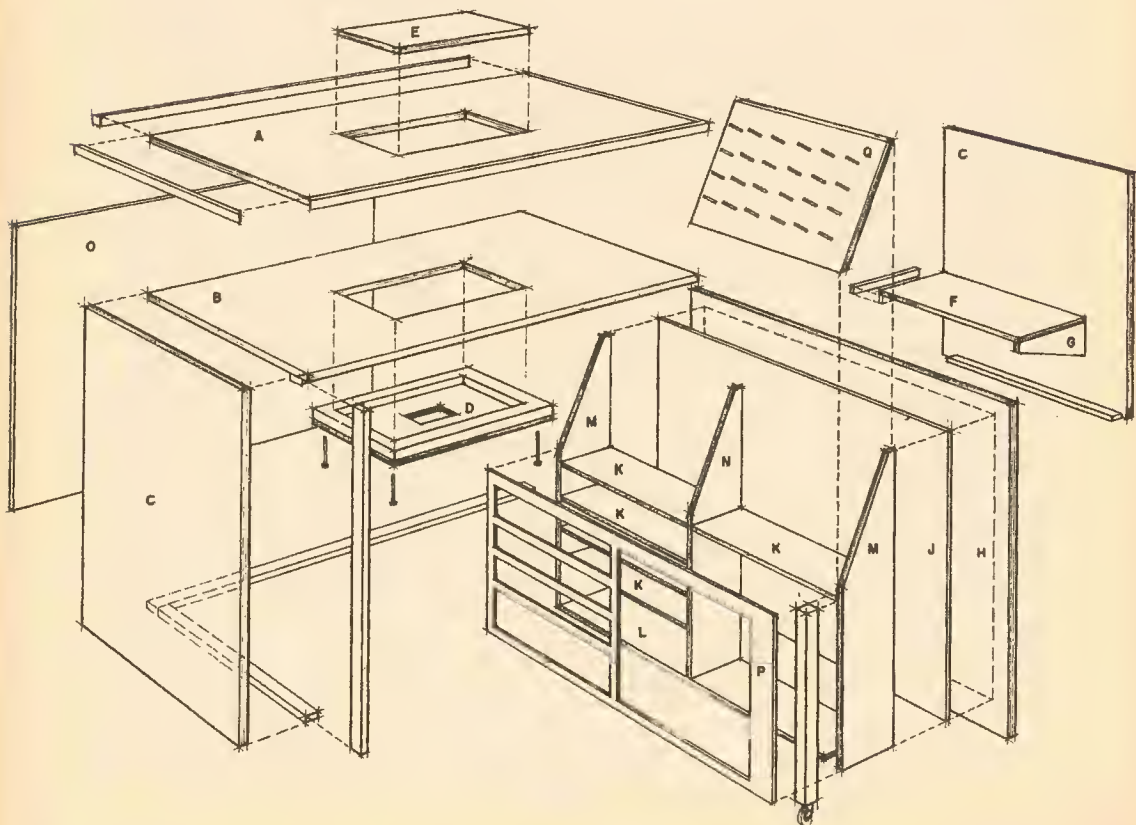
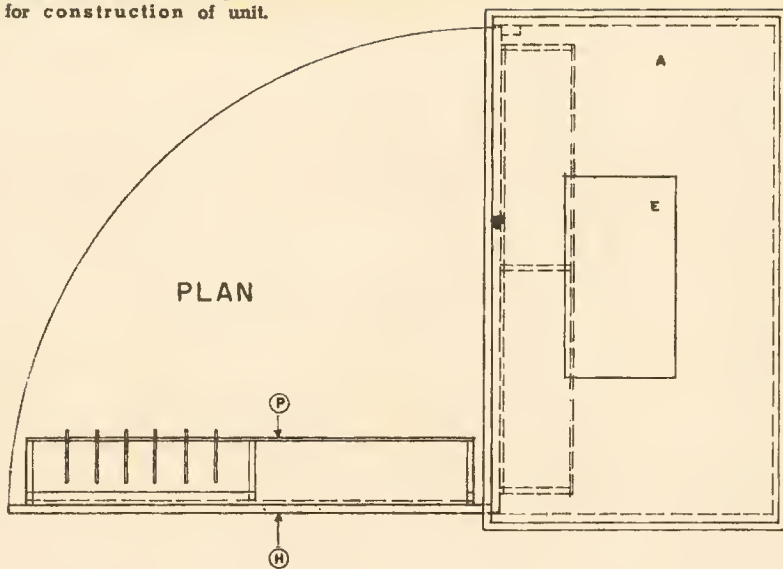
PARTS SCHEDULE

CODE	REQ'D NO.	SIZE	PART IDENTIFICATION
A	1	24" x 41 1/2"	Top
B	1	23 1/2" x 40"	Sub-Top
C	1	28" x 40"	Door
D	1	As Required	Bottom of Well
E	1	As Required	Cover
F	2	8" x 16"	Shelf
G	2	4 1/2" x 8"	Bracket
H	2	24" x 29 1/4"	Side
J	1	23 1/2" x 36"	Shelf Back
K	5	5" x 17 1/4"	Shelf
L	1	5" x 35"	Shelf
M	2	5" x 23 1/2"	Divider
N	1	5" x 22 3/4"	Divider
O	1	29 1/4" x 40"	Back
P	1	15" x 36"	Face Frame
Q	1	10" x 17 1/4"	Rack
	5 Lin. Ft.	3/16" Dia.	Dowel
	12 Lin. Ft.	1/2" x 1 1/4"	Hardwood Edge
	14 Lin. Ft.	1" x 2"	Door Stop & Cleats
	1 1/2 Lin. Ft.	2" x 2"	Leg
	6 Lin. Ft.	5/4" x 2"	Blocking
	4	1/4" x 4"	Bolt & Nut
	1 Ea.	1 1/4"	Swivel Caster
	1 1/2 Pr.	1 1/2"	Semi-Concealed Hinges
	1 Ea.		Friction Catch
	1 Ea.		Door Pull

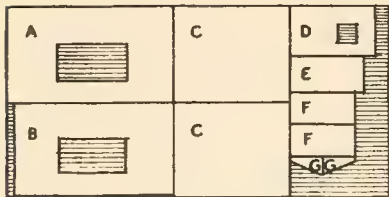
MISCELLANEOUS—4d and 6d finish nails, screws and glue finishing materials.

ITEMS which often become lost are stored in full view in this cabinet. Wood dowels on sloped surface hold spools; lipped shelving holds scissors, patterns, etc. Machine is stored when not used.

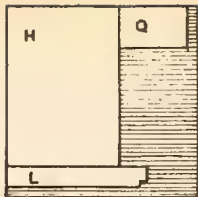
DIAGRAMS shown here give complete dimensions for construction of unit.



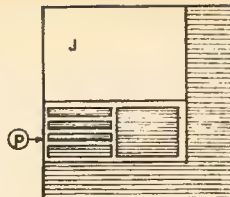
CUTTING DIAGRAMS



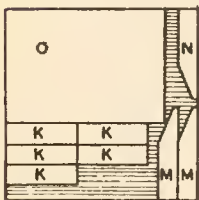
3/4" x 4'-0" x 8'-0" PLYPANEL A-D • DFPA



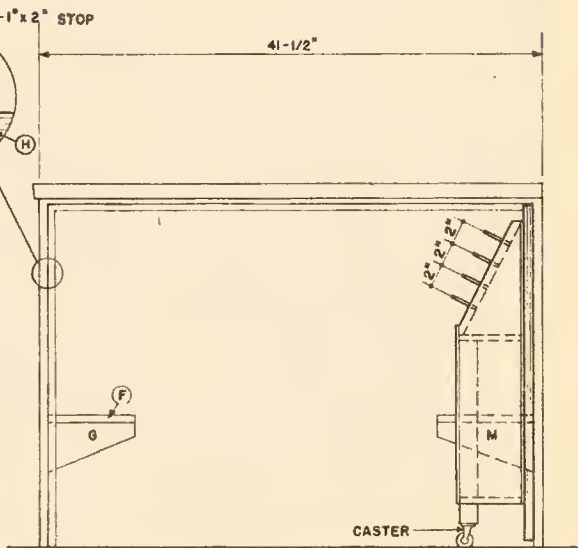
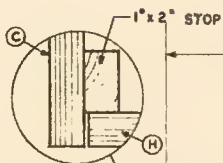
$\frac{3}{4}$ " x 4'-0" x 4'x0"
PLYPANEL A-D • OFPA



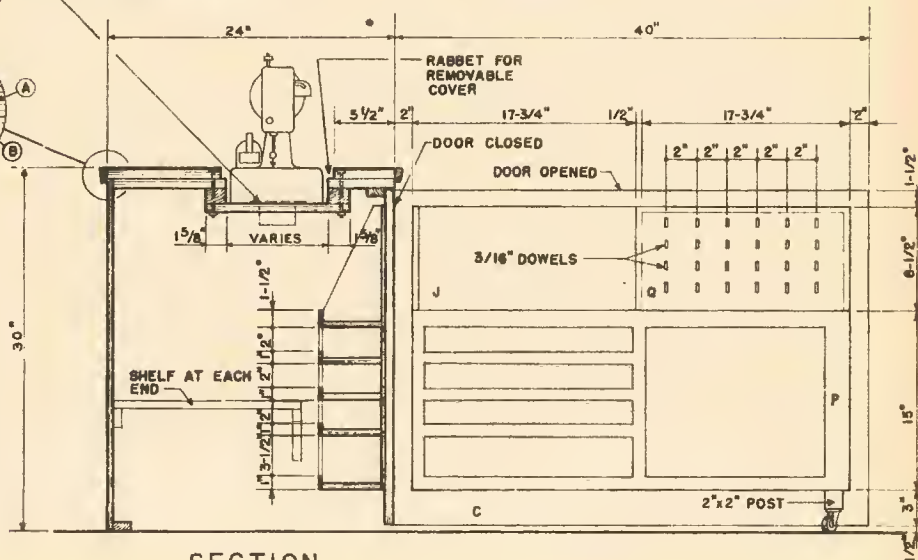
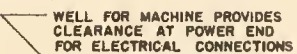
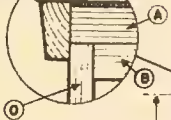
1/4" x 4'-0" x 4'-0"
PLYPANEL A-D • DFPA



1/2" x 4'-0" x 4'-0"
PLYPANEL A-D • DFPA



FRONT ELEVATION



SECTION



NO MORE rummaging through crowded drawers to find a pair of scissors if there's a scissors rack on your kitchen or sewing room wall. This one holds five different pairs, protects their points and cutting edges.

INDOOR PROJECT No. 18

scissors rack

It's highly recommended for both safety and convenience

THIS wall-mounted scissors rack offers you just the right-sized scissors, whether you need dressmakers' shears or little snippers. They're *there*. You pull them out handle-first. The rack protects their points and cutting edges, and, most important, holds the scissors beyond the reach of small youngsters.

You can build the attractive but simple scissors rack shown in an evening or two. The only tools you'll need are a saw, hammer and rasp. The only materials, four

small pieces of ½-inch fir plywood. These blocks of plywood are sawed to shape, assembled with glue and nails, rasped and sanded smooth—and there's your scissors rack, ready for painting.

You can enamel it to match or harmonize with the walls and woodwork in your sewing room or bedroom. Painted gloss white, it's an attractive and functional wall fixture for your kitchen. You simply screw your rack to the wall, or mount it with contact cement or black mastic adhesive. •



TO MAKE unit, collect five pairs of scissors. Arrange them in order of size on a backboard made from a 7½x12-inch piece of plywood, their points on a line ¼ inch from bottom edge. Mark a center line for each pair, as workman is doing above.



SAW OUT the three blocks for the shelf of your rack. Lay scissors in position on the center block directly above the centerlines you drew on the backboard. Draw around the scissors with pencil, then saw out the slots with coping saw, as shown.



ASSEMBLE the four pieces of rack, gluing and nailing the blocks to backboard with small finishing nails. Set nail heads and fill the holes with plastic wood. When glue dries, round corners with rasp.



AFTER sanding is completed, give rack a coat of penetrating resin sealer. Then enamel it in a color to match or harmonize with your wall. Mount it with screws, contact cement or mastic adhesive.



OFFICE AREA for kitchen provides a shelf space for telephone, telephone book, newspapers, magazines, plus file card drawers for recipes. Other items can also be tucked away in drawers. Drawer construction is simple, as photo left shows. Complete dimensions for unit are given in drawing across the page.

recipe file- telephone desk

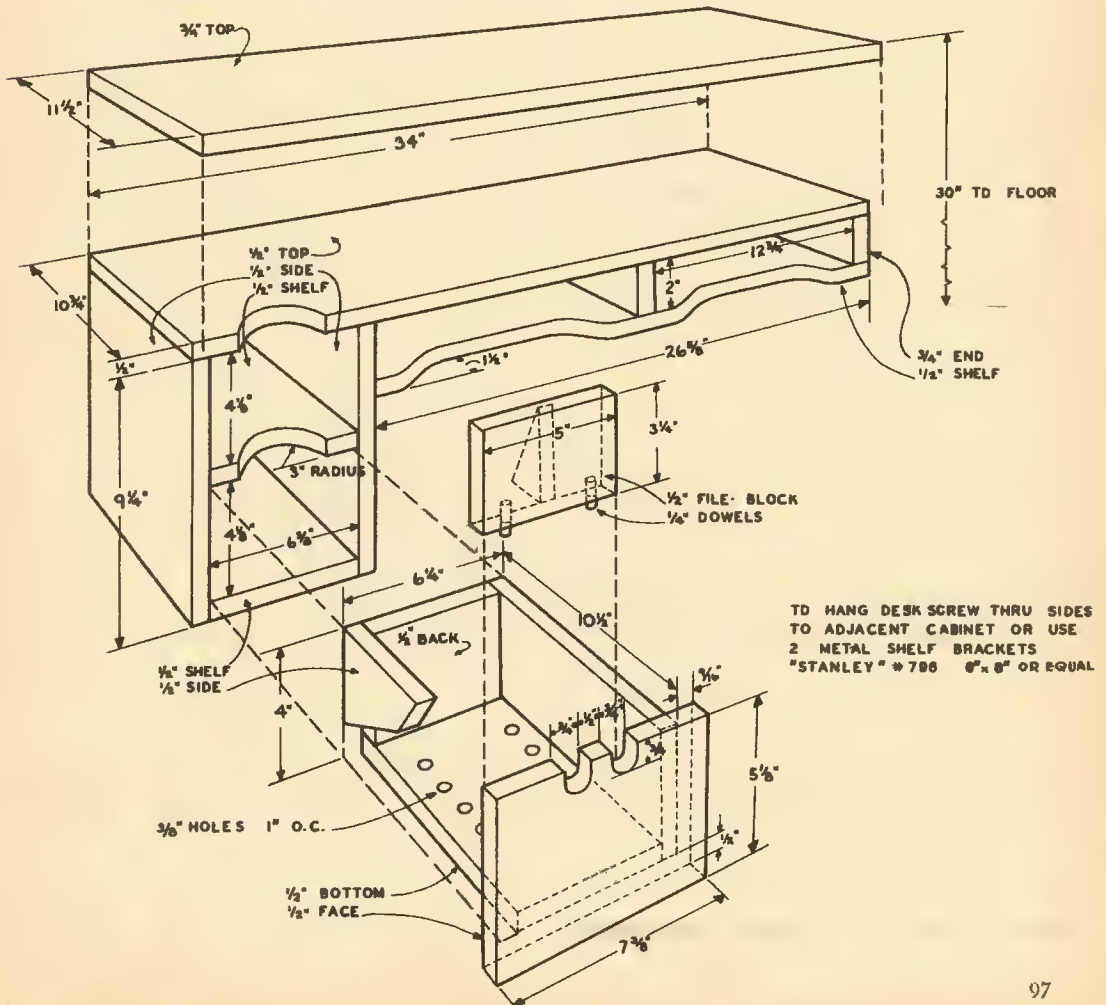
Add this compact "little office" to your kitchen facilities

CUT all desk parts to size, sand edges and fit together. Assemble $\frac{1}{2}$ -inch shelf and top, then sides and shelves of recipe file section. Glue all joints and nail with 6d finishing nails.

Cut parts for two recipe drawers, sand edges and fit together. Assemble with glue and 6d finishing nails.

Attach $\frac{3}{4}$ -inch top, apply decorative surfacing material and band edges as required for location where desk will be used.

Finish entire unit as recommended and install on wall or between cabinets. Unit will provide the kitchen with very usable office area. •



INDOOR PROJECT No. 20

vegetable storage

This cabinet can be combined with others or built as a single unit

LOCATE vegetables storage near sink work center. A single door neatly conceals three metal bins.



CONVENIENT, ventilated bins in this cabinet are easy to clean. They are also easy to build, since they come complete with drawer guides mounted on the framework, ready to slip into place.

Lay out all structural panels and cut stock for the cabinet. If natural finish is planned, face strips, drawer front and door should be cut from one piece of plywood so the grain pattern will match over the entire cabinet front. Allow for saw kerfs between each piece in laying out your plywood.

Sand the edges of all pieces and fit mating parts together to check dimensions before assembly.

All joints should be glued and nailed. Fasten the cabinet bottom to base and ledger strips first, using 6d or 8d finish nails.

Glue and nail side panels to the bottom, base and ledger pieces next. Then install $\frac{1}{4}$ " back panel in the rabbeted edges of the sides.

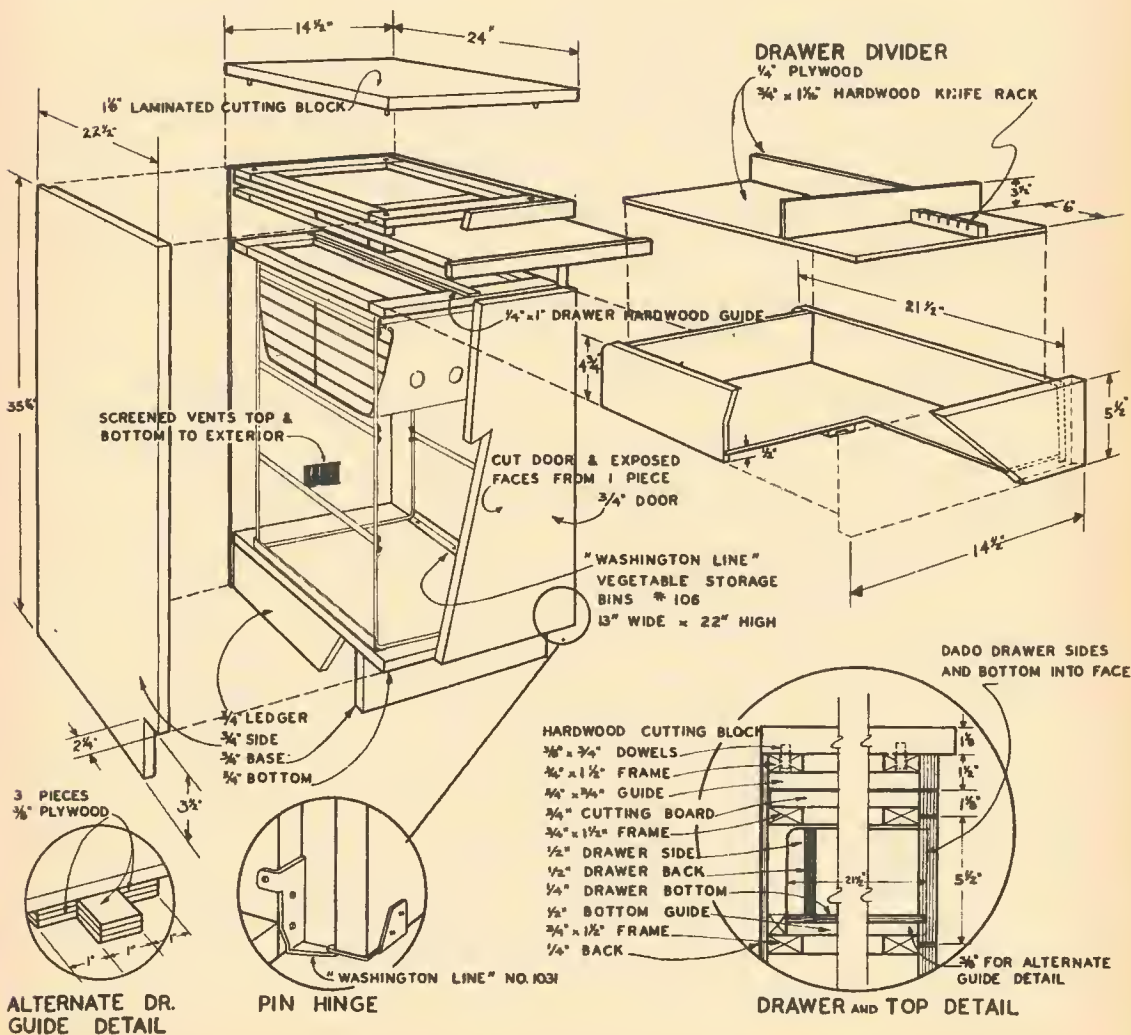
After checking carefully for fit in position, glue and nail the frames and guides for drawer and sliding cutting board.

Move cabinet assembly into place and level base if floor is uneven.

Cut drawer parts to size, dado as required, check in place for fit and assemble with glue and 4d finish nails.

Hang door and install face strips.

After finishing natural or in color as recommended by the paint manufacturer, install the vegetable bins, laminated cutting block and handles. Be sure to seal all plywood edges thoroughly and apply equal coats of finish to both inside and outside faces of door. •



INDOOR PROJECT No. 21

range cabinet

It keeps those pots and pans in good order



TO MAKE this range counter cabinet, first determine the final dimensions to suit the range unit to be used and the space your cabinet will occupy.

Cut all structural parts and framing members. Sand edges and fit.

Assemble by attaching base and ledger to bottom shelf, then installing ends, back, intermediate standards and frames.

Level cabinet if necessary to compensate for an uneven floor.

Glue all joints and nail with 8d finishing nails.

Install face panel and counter top, hang

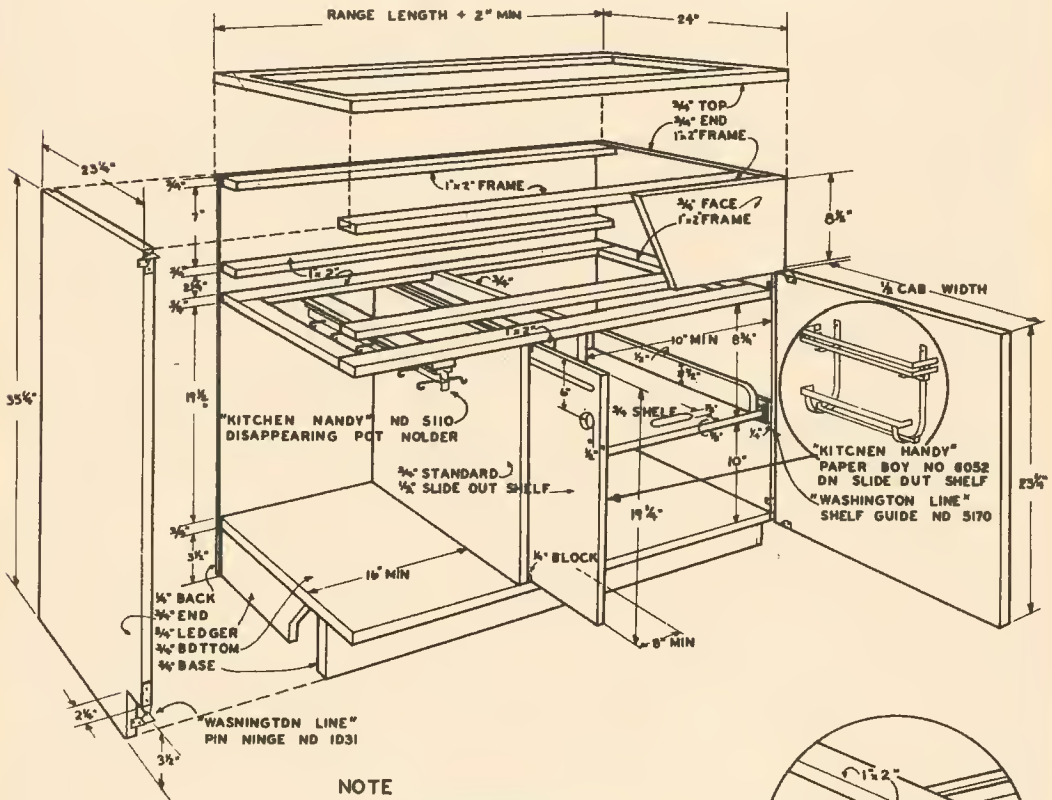
doors and finish as recommended . . . making certain all door edges are carefully primed and both faces finished alike.

Fit sliding shelves and attach accessories.

The telescoping pot holder disappears into the cabinet recess when not in use. Hooks provide easy access to the pots and pans.

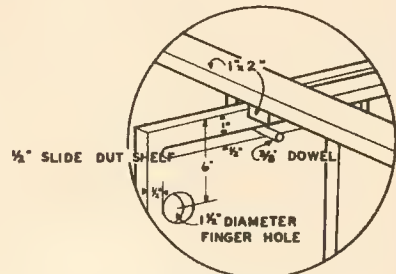
Entire unit has been planned for easy access to the things most needed around the range and stove.

The diagram shown below contains all the necessary dimensions for the various cabinet parts. •



NOTE
CUT FACES AND DOORS OUT
OF 1 PIECE OF PLYWOOD

DIAGRAM shown here contains all dimensions of the various parts needed to construct range cabinet. Study diagram carefully before you begin to put unit together.



**SLIDE OUT SHELF
STOP DETAIL**



THIS oven utensil cabinet provides a place for all those bulky oven utensils that so often are awkward to store. Diagram across the page gives all the necessary dimensions and details needed to build the unit.

oven utensil cabinet

Here's another easy-to-build kitchen unit to keep your pots and pans in order

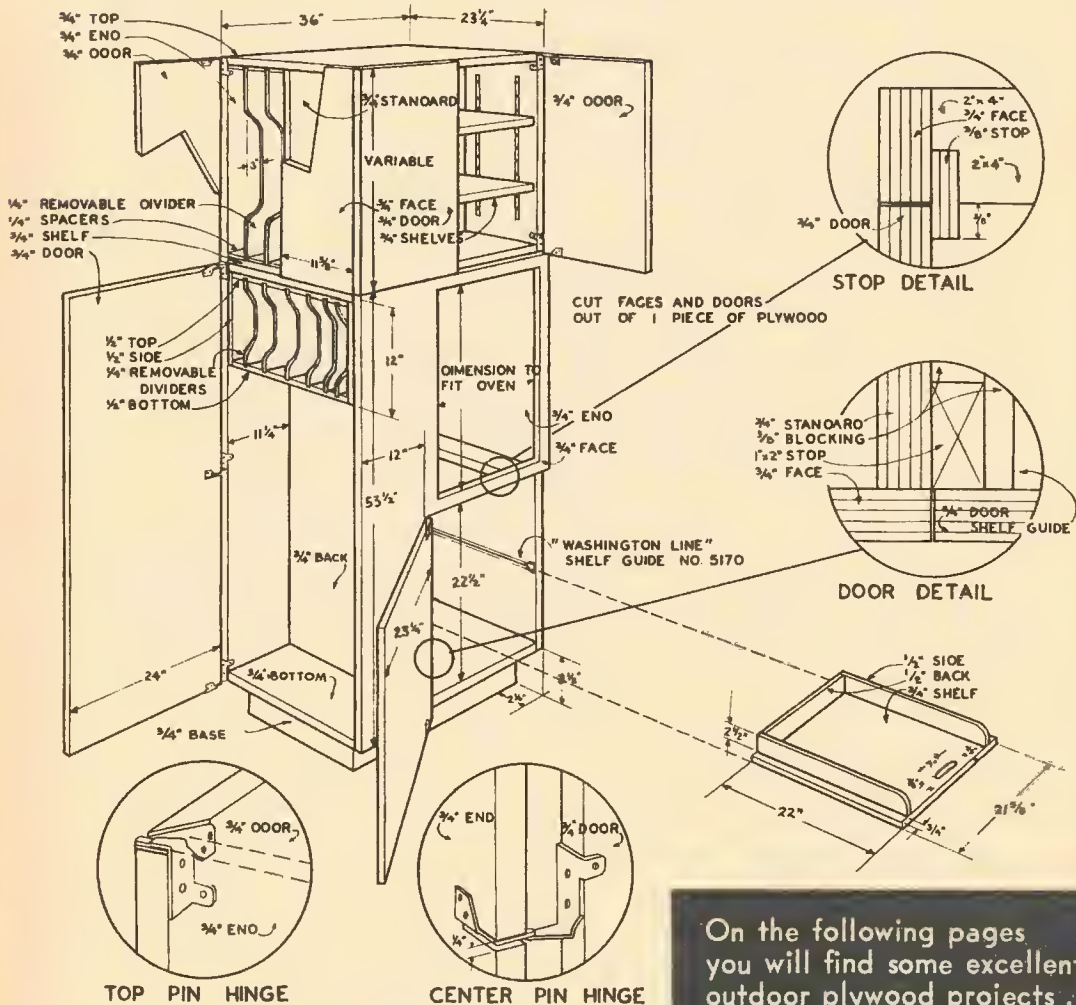
DETERMINE final dimensions according to the oven unit to be installed and the space your cabinet will occupy. Cut all structural parts to size. If possible, cut matching doors and faces from the same panel so the grain pattern will be uniform. Sand edges, fit and assemble.

This cabinet can be most easily assembled flat on the floor instead of erect. Glue all joints and attach ends and back to bot-

tom, top and shelves with 8d finishing nails. Attach base, erect in place and level cabinet if necessary to compensate for an uneven floor.

Fit and install face panels and doors . . . making certain all door edges are carefully primed and both faces finished alike. Install shelf supports and pan dividers after finishing as recommended.

Then paint color desired. •



On the following pages
you will find some excellent
outdoor plywood projects . . .



OUTDOOR PROJECT No. 1

shoreside cabana

It proves that a storage house
need not look makeshift

THIS handsome Cabana demonstrates that a storage house need not look makeshift. This design features a unique roof constructed of fir plywood panels bent into a series of arches. Only the roofed area contains storage but adjoining fences on each end add attractively to the Cabana's scale and effectiveness as a wind screen.

Follow the step-by-step procedures as enumerated below for fastest and simplest construction:

Determine size of concrete pad required. Roughly level off the ground surface so the concrete will have about 3½-inch thick-



PHOTOS ABOVE show storage units which are housed neatly behind folding doors of shoreside cabana. Storage units have plenty of space, will accommodate all kinds of garden and terrace equipment. Unique roof is constructed of plywood bent into a series of arches. Unit is very easy to build. Study detailed drawings on the following pages before you undertake project.

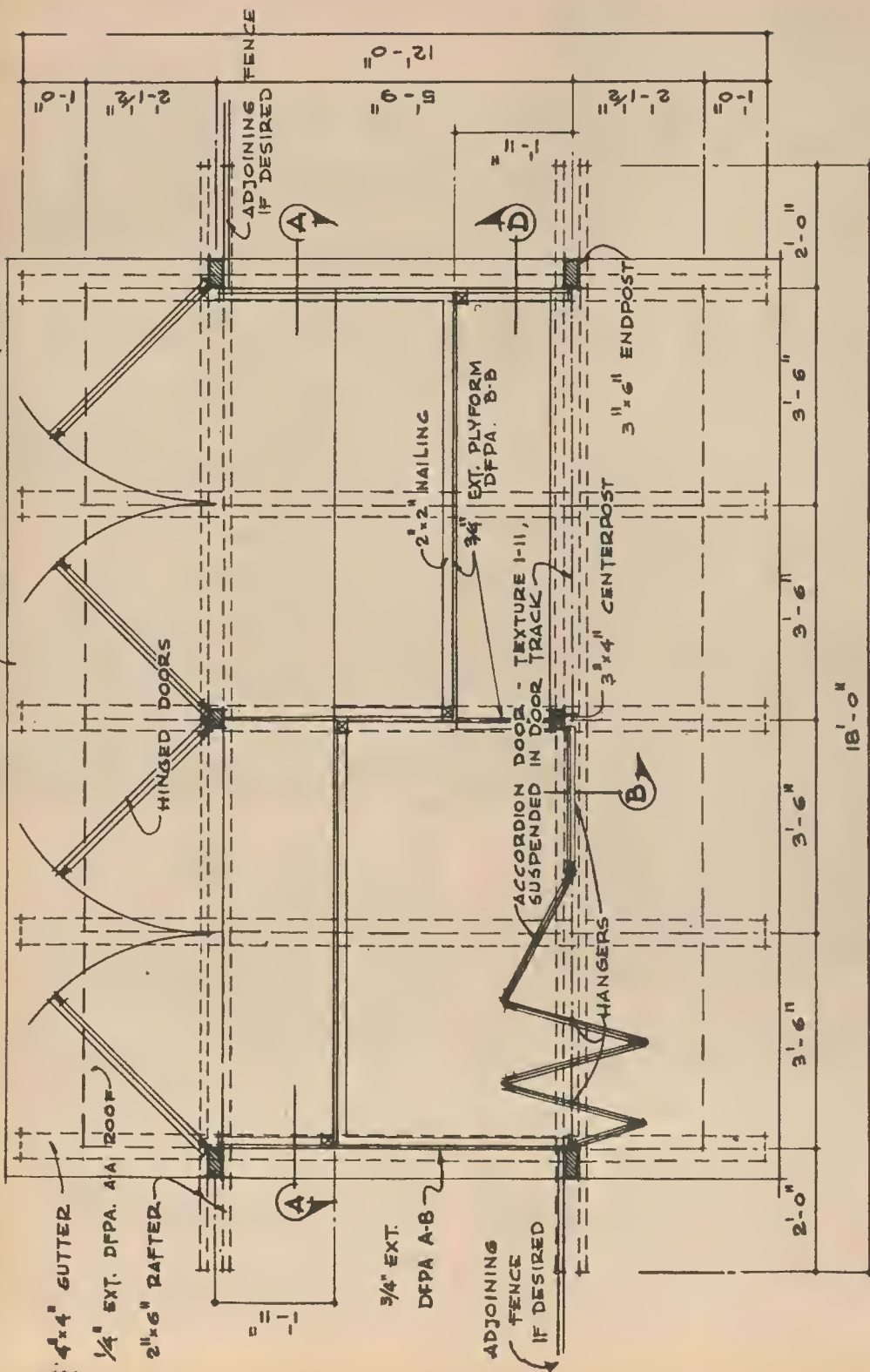
ness throughout. Excavate a trench approximately 4 inches below this leveled area to provide for perimeter footing. Set 2x8 forms in trench at the proper depth to provide for a slope of $\frac{1}{8}$ inch per foot away from Cabana to all edges of the concrete pad. Install 2x4 screeds along post lines front and rear. Pour concrete mixed to the following proportions into form: 1 part cement, 2 parts sand, 4 parts gravel, with enough water to form a thick, fairly dry mix. Strike off surface along screeds with a wood float giving it a rough, non-skid surface texture. After concrete has set up sufficiently, set $\frac{1}{2}$ x5-

inch steel dowels $2\frac{1}{2}$ inches into concrete at position of posts. Forms may be removed in 24 hours.

Cut and notch 2x6 rafters as shown in elevation. Drill $\frac{1}{16}$ -inch holes into the bottom end of all posts to receive $\frac{1}{2}$ -inch dowels. Lay each post and rafter assembly flat and nail rafters to front and rear of posts with 16d galvanized nails. Be sure to insert blocking where required. Notice the center post in front is notched and nailed to the rear rafter only, to provide clearance for accordion door track. Treat bottom ends of posts against moisture with creosote. Added protection is gained by slipping a $\frac{1}{8}$ -inch thick painted steel plate with a hole drilled for a $\frac{1}{2}$ -inch dowel, under vertical posts before assemblies are raised into position.

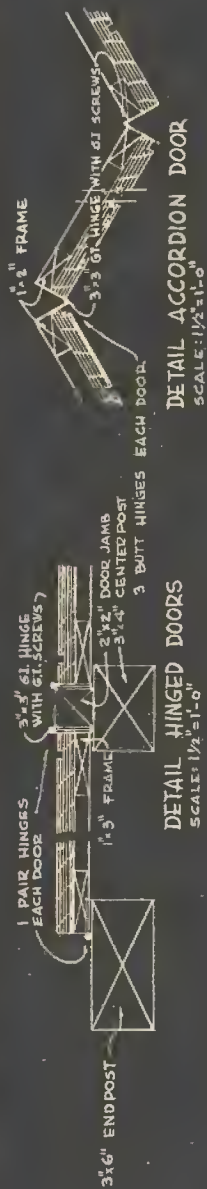
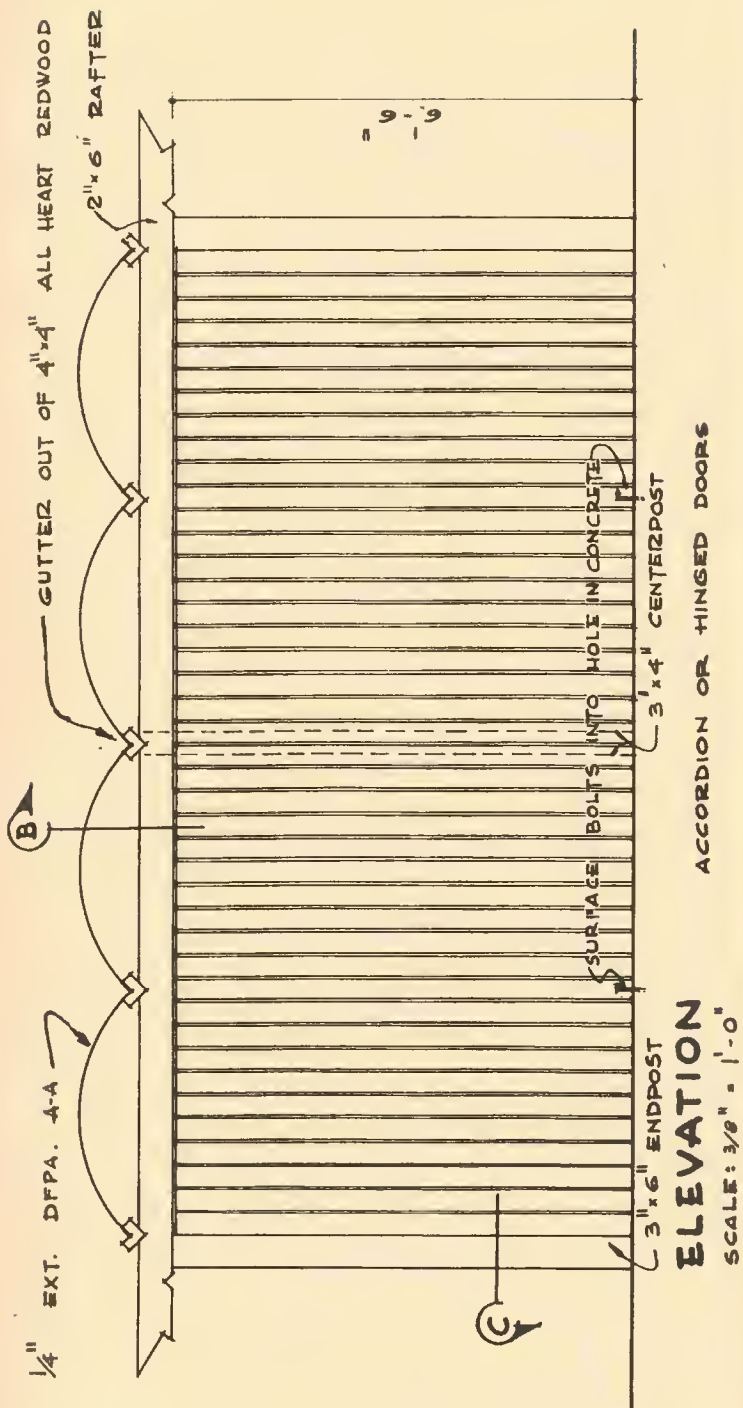
After checking with carpenter's level for vertical alignment of posts, brace structure temporarily with diagonals at end walls. Gutters can be made by notching

CONCRETE PAD AS REQUIRED

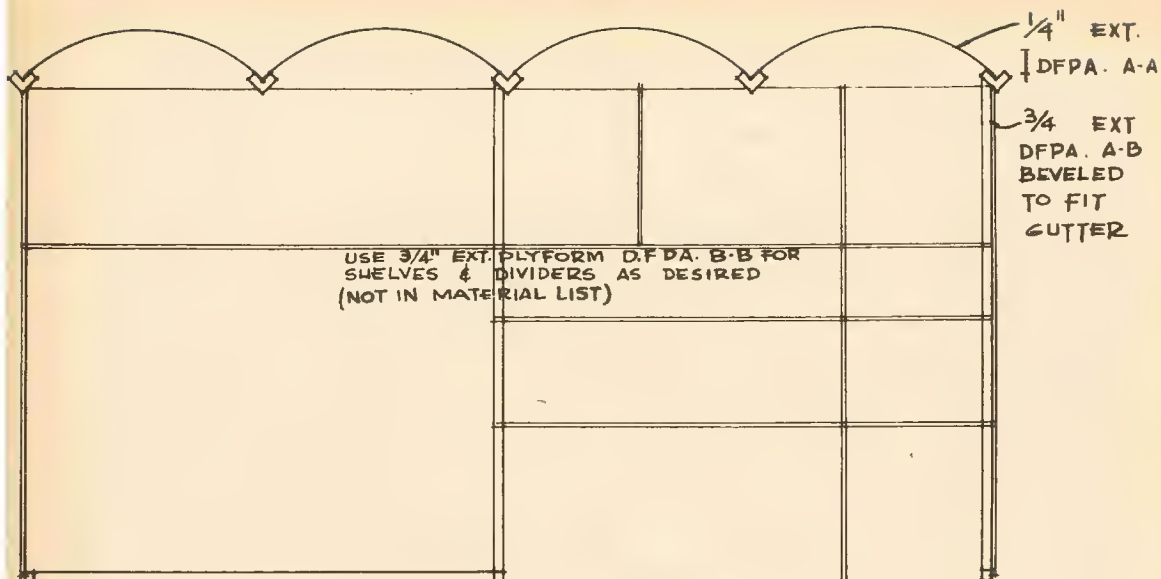


PLAN

SCALE: 3/8" = 1'-0"

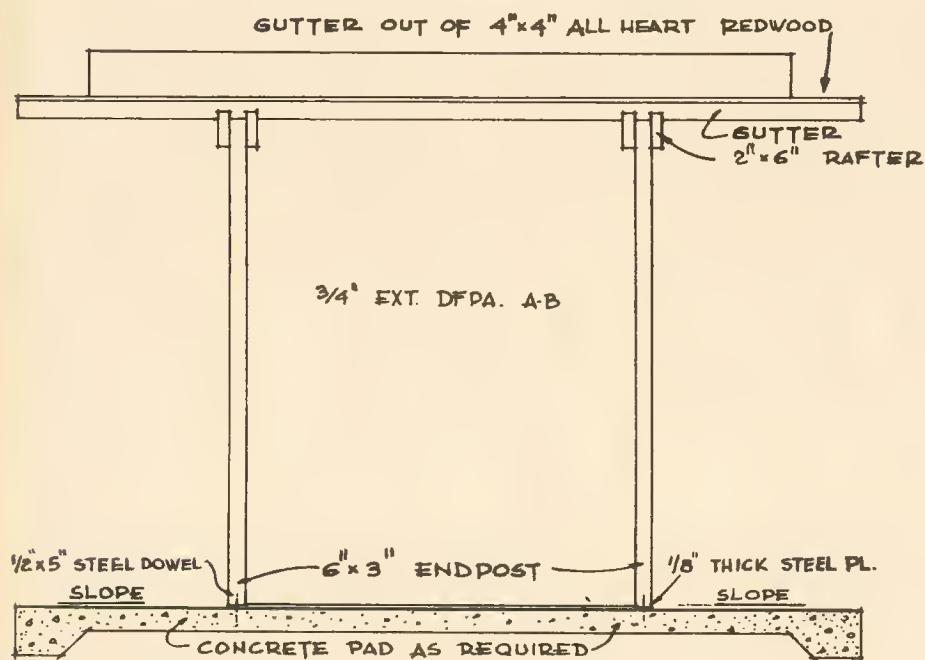


DOOR DETAIL



SECTION A-A

SCALE: $\frac{3}{8}" = 1'-0"$



ELEVATION

SIDE

SCALE: $\frac{3}{8}" = 1'-0"$

FIRST STEP in building
shoreside cabana is to
put up the framework,
as photo here shows.



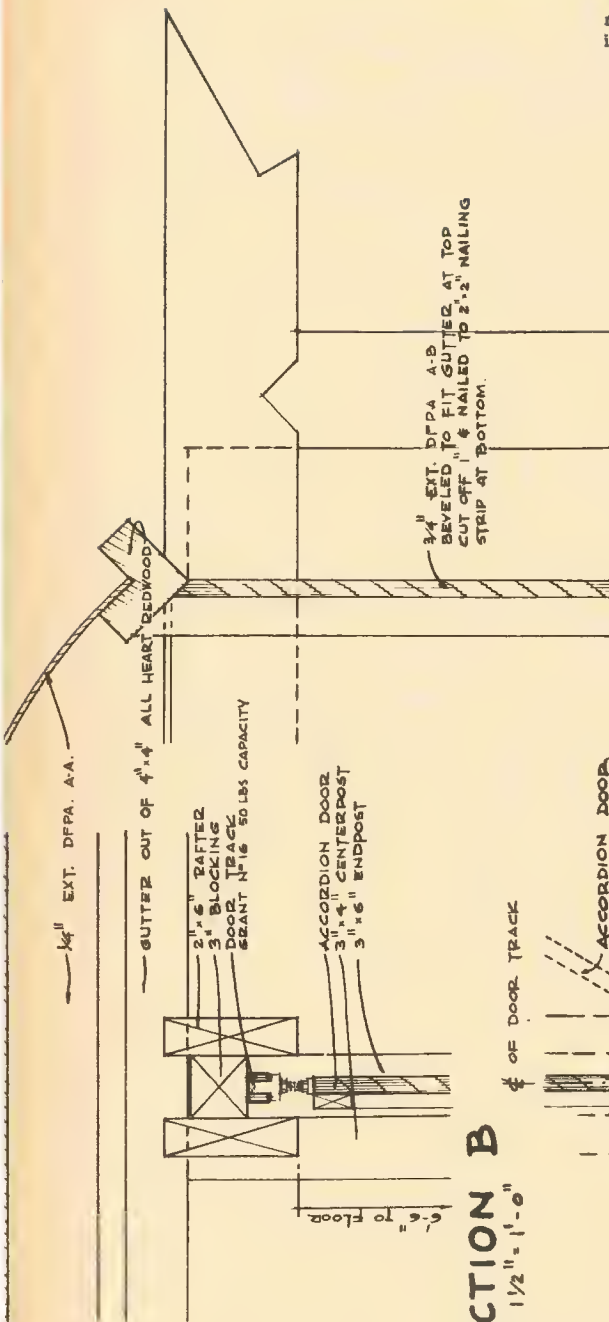
PLYWOOD sides and roof
then go in place. Roof
arches are bent into
place, then nailed down.



ROOF pieces need not
be wet when they are
bent into place. Plywood
bends easily by hand.

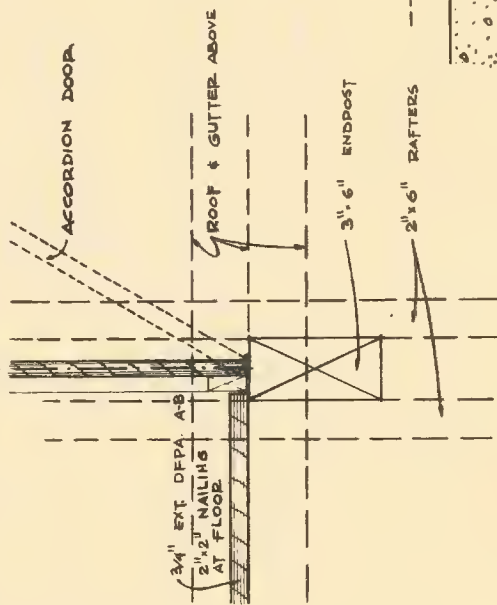


GUTTERS can be made by notching a 4x4 with a "skill" or table saw. Place gutters into notched rafters and fasten with 16d galvanized nails. Drawings here show part of gutter construction details.



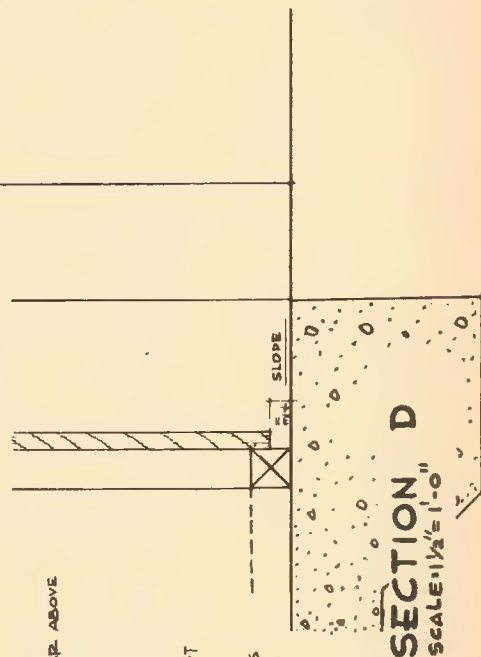
SECTION B

SCALE 1/2" = 1'-0"



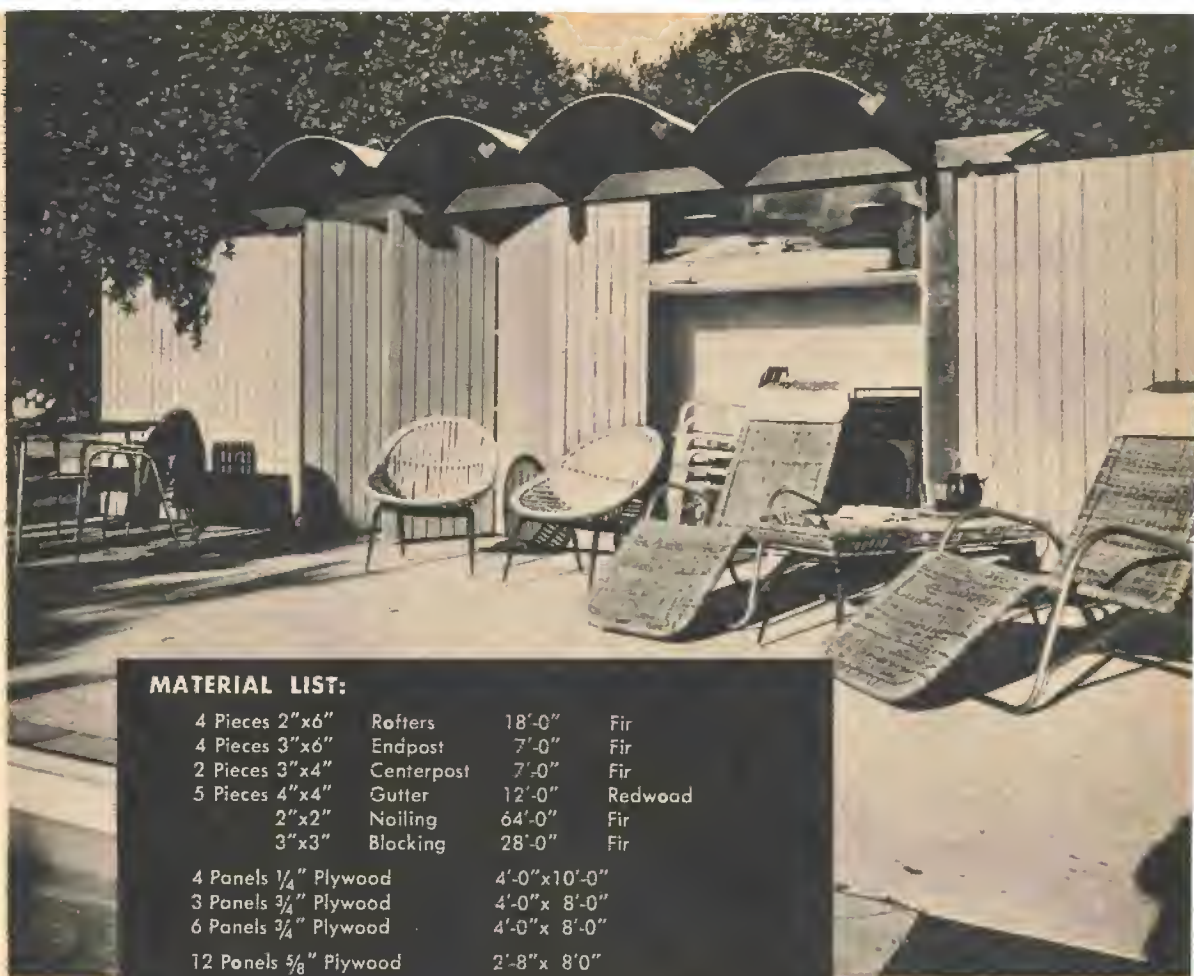
SECTION C

SCALE: 1/2" = 1'-0"



SECTION D

SCALE: 1/2" = 1'-0"



MATERIAL LIST:

4 Pieces 2"x6"	Rafters	18'-0"	Fir
4 Pieces 3"x6"	Endpost	7'-0"	Fir
2 Pieces 3"x4"	Centerpost	7'-0"	Fir
5 Pieces 4"x4"	Gutter	12'-0"	Redwood
2"x2"	Nailing	64'-0"	Fir
3"x3"	Blocking	28'-0"	Fir
4 Panels 1/4" Plywood		4'-0"x10'-0"	
3 Panels 3/4" Plywood		4'-0"x 8'-0"	
6 Panels 3/4" Plywood		4'-0"x 8'-0"	
12 Panels 5/8" Plywood		2'-8"x 8'-0"	
	Texture	1-11	-Pattern 32/4
1"x2"	Door Frames	72'-0"	Fir
1"x3"	Door Frames	56'-0"	Fir

Concrete, Hardware and Finishing Materials as Required

CABANA provides a beautiful backdrop for a swimming pool, also serves as a windscreen for the pool. And it has storage features.

a four by four with a "skill" or table saw. Place gutters into notched rafters and fasten with 16d galvanized nails. Give gutters a gentle slope to shed water by notching rafters slightly deeper at back.

Cut plywood for end walls and nail to posts making certain that vertical joints will occur at nailing strips. Set nailing strips on concrete pad with 16d concrete nails.

Beginning at the center, nail 1/4-inch exterior plywood roof arches into gutter along each edge with 4d galvanized screw nails. Bend into position and nail opposite edges into gutters on each side of center one. Repeat for remaining roof arches. The plywood need not be wet when bent. Next install interior plywood partitions using nailing strips as shown.

Hinged doors are constructed using Tex-

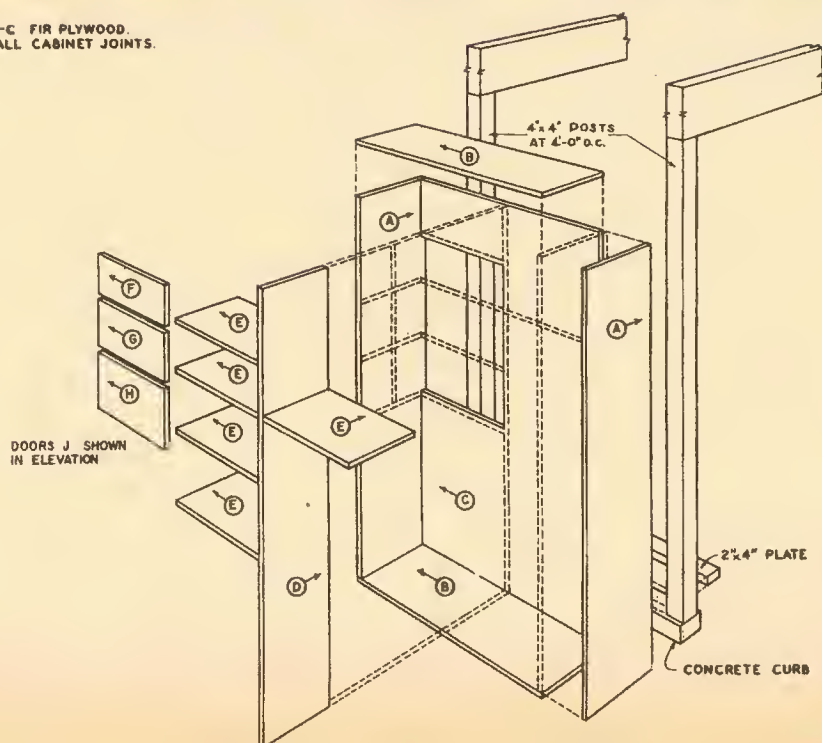
ture One-Eleven plywood to which a 1x3-inch frame is applied. Detail shows how doors are hung.

The accordion door hinged to the post at left is made from a half-width panel of Texture One-Eleven plywood. All others are made from full-width panels except the first at right, which must have approximately 8 inches cut from its width to adjust total length of doors for fit. Apply the 1x2-inch frames and hinge doors as shown in detail. Install the door track and hang doors, carefully following manufacturer's instructions.

Finish in paint and stain closely following recommendations of manufacturer. Be sure to seal all door edges well and finish both faces alike. If adjoining fence on both ends is desired, order extra material and finish to match doors of the Cabana. •



USE EXTERIOR A-C FIR PLYWOOD.
GLUE AND NAIL ALL CABINET JOINTS.



lawn tool storage

Build it into a carport, or build it as a separate unit

ADEQUATE equipment storage can lighten lawn care cost and labor. This cabinet pays dividends in attractiveness, convenience, longer life for tools and reduced waste in supplies.

Before cutting plywood, measure articles you want cabinet to hold. Depth should be increased for most power mowers. Use only plywood made with 100% waterproof glue.

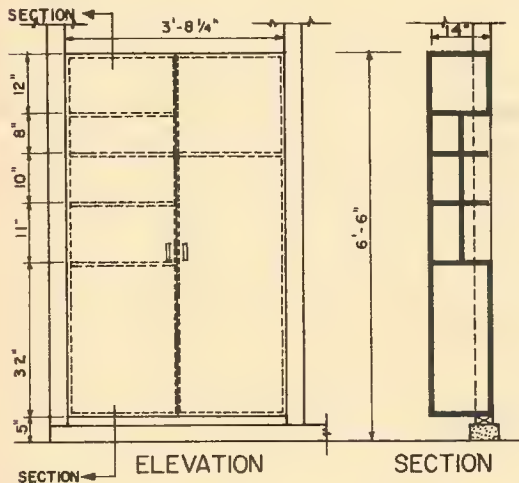
Here, the plan shows dividers for three shallow shelves when accessible from both sides. Against a solid wall, you do not need dividers "F," "G," and "H," and should not cut two shelves "E" out of back "C."

Assemble cabinet completely before installation. If built into a carport as shown, nail securely to posts through sides. On a solid wall, nail through back into studs.

To assemble, lay back flat on floor and nail bottom, sides, top and divider "D" in that sequence. Nail through sides and partition into ends of shelves and dividers. Use waterproof glue at all joints.

When you hang doors, be sure to prime all edges thoroughly and give both faces the same number of finish coats.

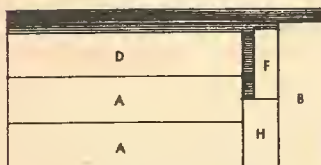
It will be easier to keep inside of cabinet clean if you finish in penetrating resin sealer. Finish outside as recommended for exposed Exterior plywood. •



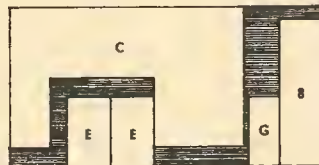
PARTS SCHEDULE

CODE	NO. REQ'D	SIZE	PART IDENTIFICATION
A	2	14" x 71 1/2"	Side
B	2	14" x 44 1/4"	Top and Bottom
C	1	42 3/4" x 71 1/2"	Back
D	1	13 1/4" x 71 1/2"	Divider
E	5	13 1/4" x 21"	Shelf
F	1	7 1/4" x 21"	Shelf Divider
G	1	9 1/4" x 21"	Shelf Divider
H	1	10 1/4" x 21"	Shelf Divider
J	2	22 1/8" x 73"	Door
	4 Lin. ft.	2" x 4"	Plate
	3 Pr.	For 3/4" Door	Mieges
	2 Ea.		Metal Door Pulls

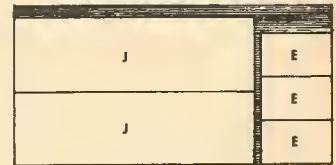
MISCELLANEOUS—6d and 8d Finish Nails and Door Catches as required. Waterproof Glue.



3/4" x 4'-0" x 8'-0" EXTERIOR A-C



3/4" x 4'-0" x 8'-0" EXTERIOR A-C



3/4" x 4'-0" x 8'-0" EXTERIOR A-C

CUTTING DIAGRAMS

OUTDOOR PROJECT No. 3

garden potting bench

Build it as part of a carport or as a regular garden house



POTTING flowers on this bench can be a pleasure with this easy to build design. No difficult cuts or joints are required in its construction.

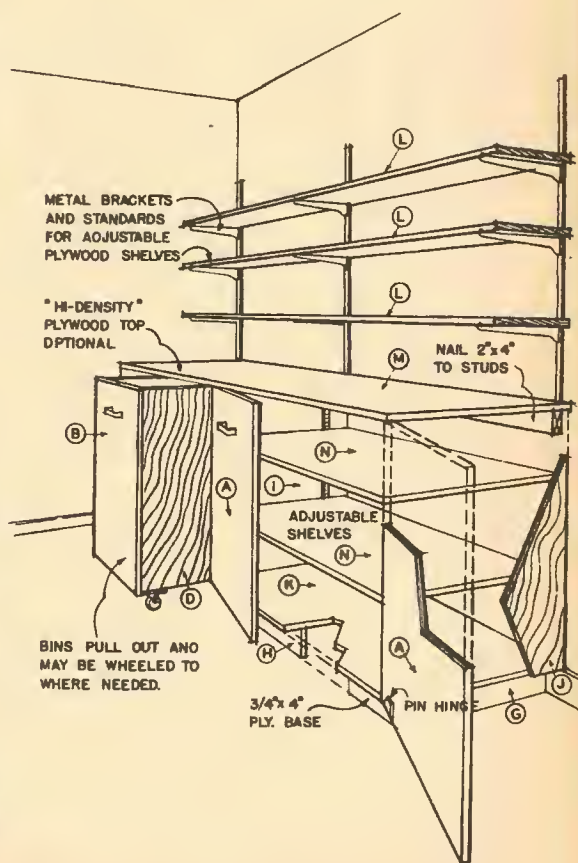
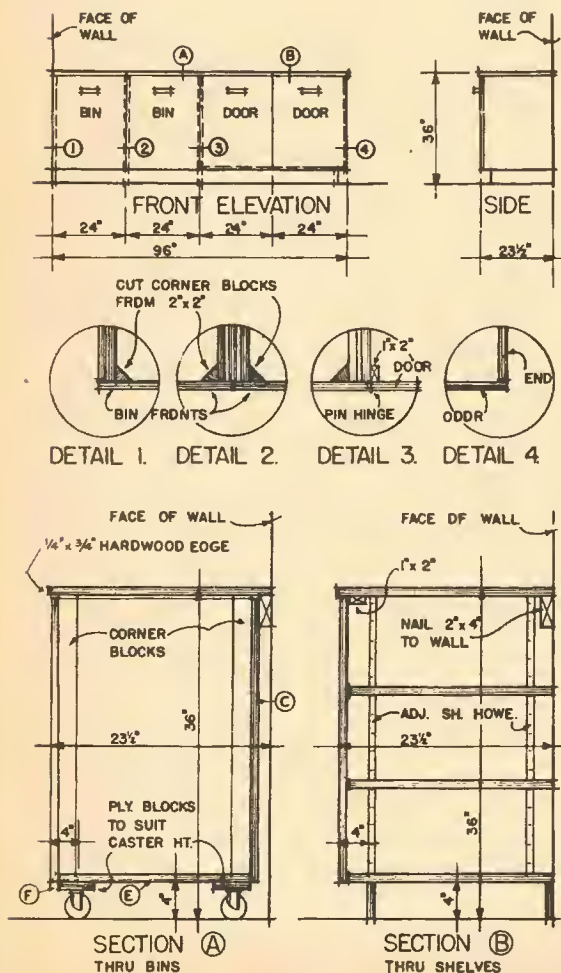
It can be built as part of a carport or installed in a garden house as desired.

Cut all plywood and framing members to exact size. Assemble base, bottom, end and center standards and nail to 2x4 which has been attached to stud wall. Glue and nail counter top into place. Assemble bins complete with casters and slip into place. Install shelf standards in base cabinet for adjustable shelves and install doors. Attach upper shelf standards to studs and set brackets in place. Apply one coat flat paint and two coats semi-gloss enamel for finish. Attach metal pulls as shown. •

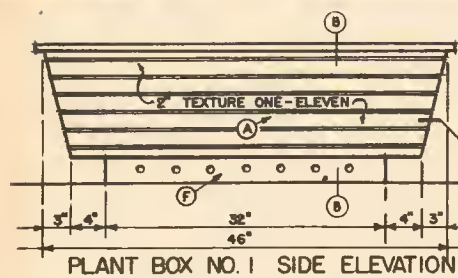
PARTS SCHEDULE

CODE	NO. REQ'D	SIZE	PART IDENTIFICATION
A	2	1'-11 15/16" x 2'-7 1/4"	Door
B	2	1'-11 15/16" x 2'-7 1/4"	Bin Front
C	2	1'-10 3/4" x 2'-7 1/4"	Bin Back
D	4	1'-8 3/4" x 2'-7 1/4"	Bin Sides
E	2	1'-9 1/2" x 1'-10 3/4"	Bin Bottom
F	8	4" x 4"	Caster Blocks
G	1	4" x 1'-7 1/2"	Base
H	2	4" x 3'-6 1/2"	Base
I	3	1'-10 3/4" x 2'-11 1/4"	Center and End Standards
J	1	1'-10 3/4" x 2'-7 1/4"	End Standard
K	1	1'-10 3/4" x 3'-10 1/2"	Bottom
L	3	8" x 8'-0"	Upper Shelf*
M	1	1'-11 1/2" x 8'-0"	Counter Top*
N	2	1'-10 3/4" x 3'-10 1/2"	Inside Shelf
	8 Ea.	2" Diam. Wheel	Plate Casters
	3 Sets		Metal Brackets and Standards
	4 Ea.	28" Long	Metal Shelf Standards
	4 Ea.		Metal Pulls
	4 Ea.		Pin Hinges
	8 Lin. Ft.	2" x 4"	Ledger
	7 Lin. Ft.	1" x 2"	Stop
	10 Lin. Ft.	2" x 2"	Corner Blocks
	8 Lin. Ft.	1/4" x 3/4"	Hardwood Edging

Miscellaneous—8d Common and 6d Finishing Nails (Galvanized)
Waterproof Glue

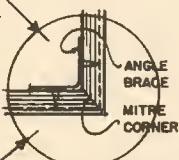


ALL PLYWOOD EXTERIOR A-C GLUE AND NAIL ALL JOINTS.

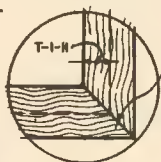


PLANT BOX NO. 1 SIDE ELEVATION

GLUE (WATERPROOF) AND NAIL ALL JOINTS WITH 6d FINISH NAILS (RING SHANK OR CEM.-COATED).

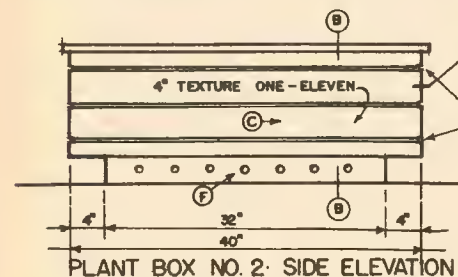


DETAIL OF CORNER
CUT FROM PANEL SO
THAT GROOVES ARE
SPACED EQUALLY
TOP & BOTTOM

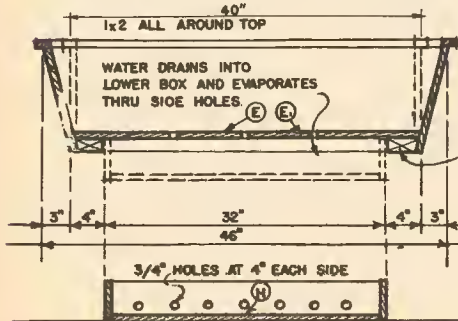


DETAIL OF CORNER
AT TOP OF BOX

CUT FROM 2x4

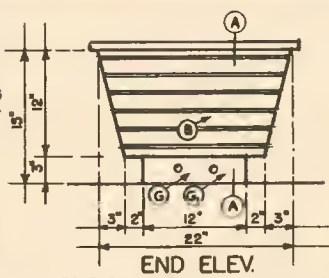


PLANT BOX NO. 2 SIDE ELEVATION

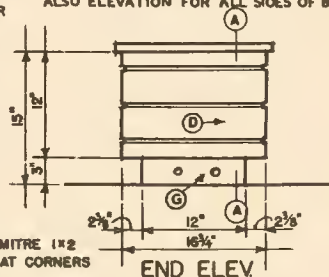


SECTION A-A THRU BOX

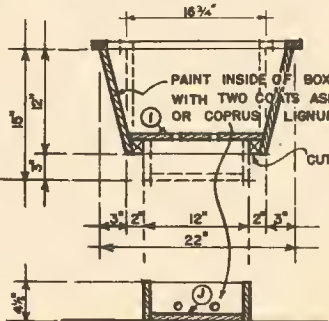
TYPICAL FOR PLANT BOX NO. 1 & 2



END ELEV.
ALSO ELEVATION FOR ALL SIDES OF BOX NO. 3



END ELEV.



SECTION B-B

TYPICAL FOR PLANT BOX NO. 1, 2 & 3

plant boxes

These three modular designs will add beauty to your garden

THE modern panel siding material used for these modular plant boxes achieves a smart surface design with little effort.

As illustrated, the three designs can be mingled, or you may arrange similar boxes in a pattern that complements or contrasts with your setting.

Cut bottom panel to size for box you build. Use only Exterior type plywood made with 100% waterproof glue. Drill drain holes.

Cut Texture One-Eleven plywood sides and ends to size and miter at corners. Check for perfect fit to prevent leaks be-

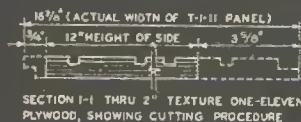
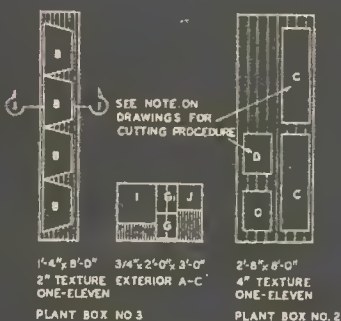
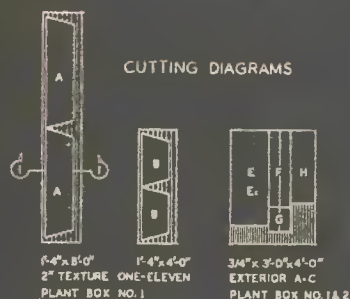
fore assembling. This will save much time.

Cut 2x2 and 2x4-inch bottom frame to size. If building designs 1 or 3, bevel sides, framing and bottom panel to conform to slope.

Nail and glue framing to bottom, then nail sides to frame. Glue mitered corners and clamp tightly together inside with angle braces and short screws.

Miter 1x2-inch top frame, nail in place and paint inside as recommended.

Cut and drill parts for drainage boxes as required, assemble with waterproof glue and nails and finish completely. •



PARTS SCHEDULE

CODE NO.	REQ'D	SIZE	PART IDENTIFICATION
PLANT BOX NO. 1			
A	2	12" x 46"	Side
B	2	12" x 22"	End
E	1	16" x 39 1/4"	Bottom
F	2	4 1/2" x 32"	Side of Base
G	2	4 1/2" x 10 1/2"	End of Base
H	1	10 1/2" x 30 1/2"	Bottom of Base
	12 Lin. ft.	1" x 2"	Top Framing
	2 Lin. ft.	2" x 4"	Bottom Framing
	7 Lin. ft.	2" x 2"	Bottom Framing
	4 Ea.	1" x 3"	Angle Braces
PLANT BOX NO. 2			
C	2	12" x 40"	Side
D	2	12" x 16 3/4"	End
E	1	15 1/4" x 38 1/2"	Bottom
F	2	4 1/2" x 32"	Side of Base
G	2	4 1/2" x 10 1/2"	End of Base
H	1	10 1/2" x 30 1/2"	Bottom of Base
	10 Lin. ft.	1" x 2"	Top Framing
	2 Lin. ft.	2" x 4"	Bottom Framing
	7 Lin. ft.	2" x 2"	Bottom Framing
	4 Ea.	1" x 3"	Angle Braces
PLANT BOX NO. 3			
B	4	12" x 22"	Side
I	1	16" x 16"	Bottom
G	2	4 1/2" x 10 1/2"	Side of Base
G ₁	2	4 1/2" x 12"	Side of Base
J	1	10 1/2" x 10 1/2"	Bottom of Base
	8 Lin. ft.	1" x 2"	Top Framing
	5 Lin. ft.	2" x 2"	Bottom Framing
	4 Ea.	1" x 3"	Angle Braces

MISCELLANEOUS—(FOR ALL PLANT BOXES)

6d Finish Nails (ring shank or cement coated). Waterproof glue. Asphalt Emulsion or Coprus Lignum as required.

OUTDOOR PROJECT No. 5

junior wheelbarrow

A practical plaything for the young gardener



FRONT end is butted between the sides; assemble unit temporarily with brads and check the fit.

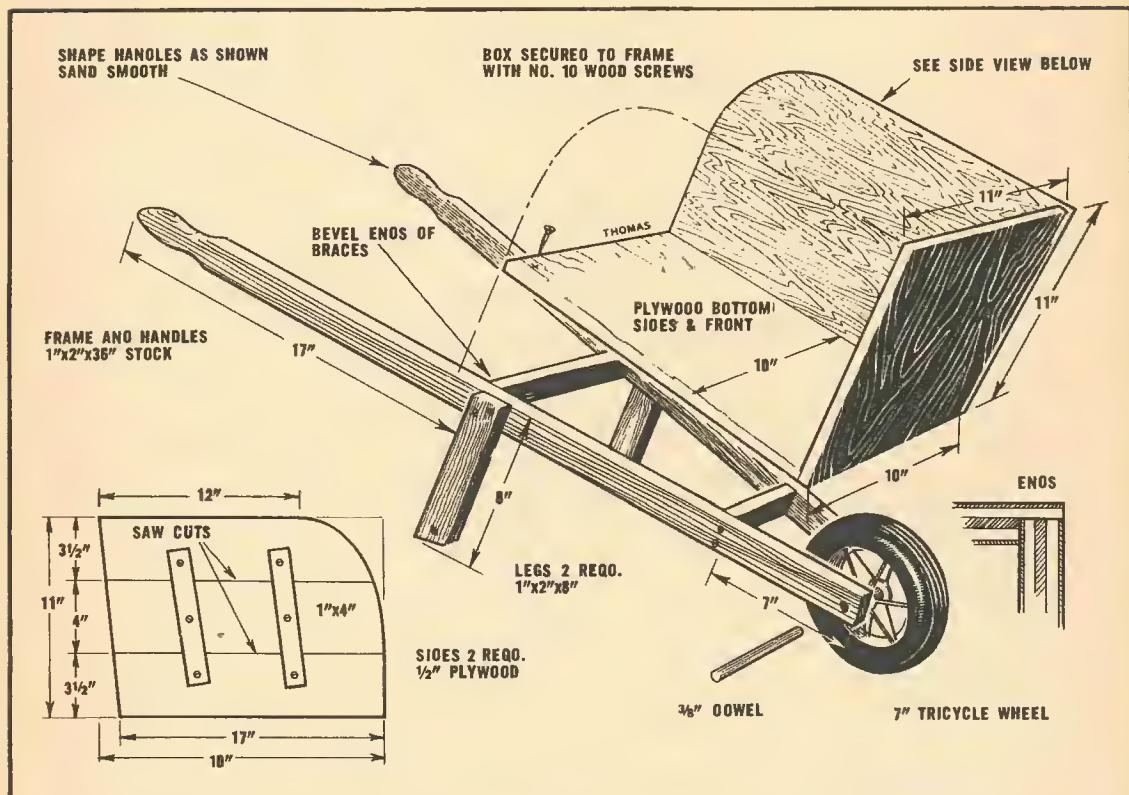
LEGS are attached to the 1x2 framework, as shown. All screws used should be round-head, rustproof.



DELIGHT the small fry gardener in your home by building him this miniature wheelbarrow for his work in the garden. He'll find plenty of use for it when gardening is out of season, too.

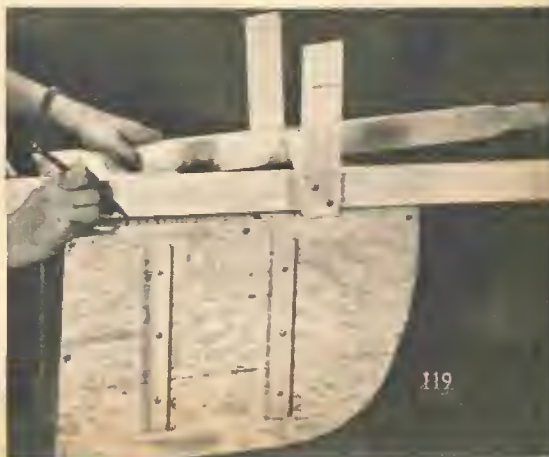
The sides, top and bottom are made from $\frac{1}{2}$ -inch plywood scraps. The framework is 1x2-inch pine or any other scrap pieces

lying around your workshop. The wheel used here is a seven-inch diameter tri-cycle wheel, but the exact size is not too important; a $\frac{3}{8}$ -inch wood dowel serves as the wheel axle. Assemble the unit as shown in the drawing. Then finish with two coats of enamel paint. Sides and frame can be painted in contrasting colors. •



TO GET proper angle for the axle hole, drill it only after the framework has been fully assembled.

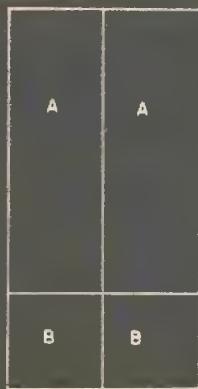
FRAMEWORK is laid on box and position is marked off. Note placement of cleats on barrow.



OUTDOOR PROJECT No. 6

hanging storage box

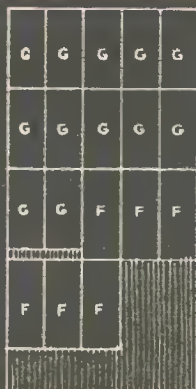
Make use of the wasted space in your
garage and install this cabinet



120 $\frac{1}{2}$ "x4'-0"x8'-0"



$\frac{1}{2}$ "x4'-0"x8'-0"



$\frac{1}{2}$ "x4'-0"x8'-0"



$\frac{1}{2}$ "x4'-0"x6'-0"

EVERY construction step from start to finish is clearly outlined by these easy-to-follow directions. Study the plan thoroughly before buying any materials.

Allow for saw kerfs as the component parts are laid out in pencil on plywood. Check the sizes given in the parts schedule.

Cut all parts for the case to size with a hand saw or a table saw if available. Sand all mating edges and check for fit.

Attach the 2x3-inch frame to the back panel and then assemble bottom, sides and top with 6d finish nails and glue. Be careful to keep the unit in perfect square as partitions and back are installed.

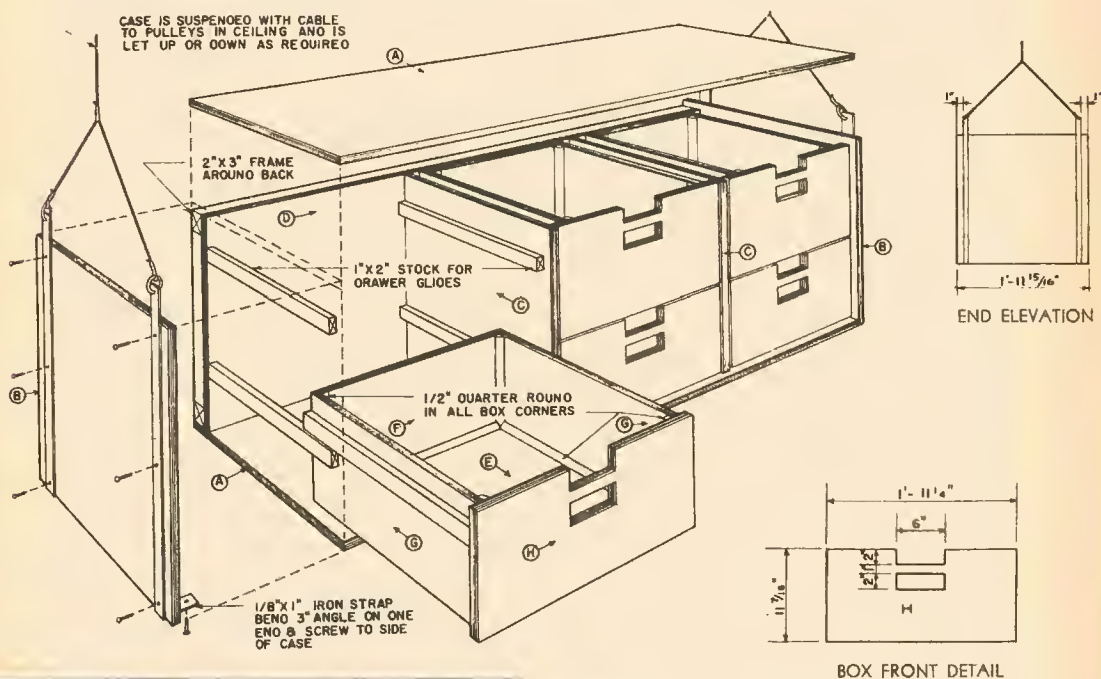
Now cut all drawer parts to size. In making the cutouts for the drawer pulls, first drill holes at all corners and remove the material with a keyhole saw. Square

out corners of cutouts with a wood rasp.

In the assembly of drawers, fasten sides, backs and fronts to bottoms with 6d finish nails and glue. Check clearance between partitions. Install 1/2-inch quarter round at inside corners for additional strength.

Attach 1x2-inch drawer guides, being careful to keep drawer bottoms clear of case. Set nails and fill holes and exposed plywood edges with spackle or wood paste. Sand edges and ease corners with 3-0 paper on a soft block.

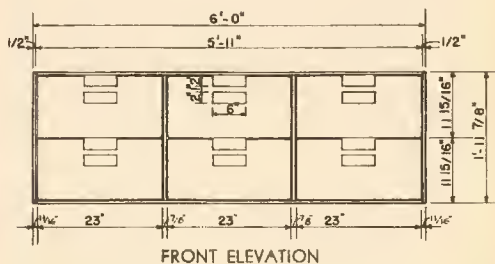
Apply enamel undercoater to all surfaces and paint metal straps with shop primer before fastening at each end with screws as shown. Follow with two coats of semi-gloss enamel, sanding lightly between coats. Install pulleys, wire cable and winch to raise into position. •

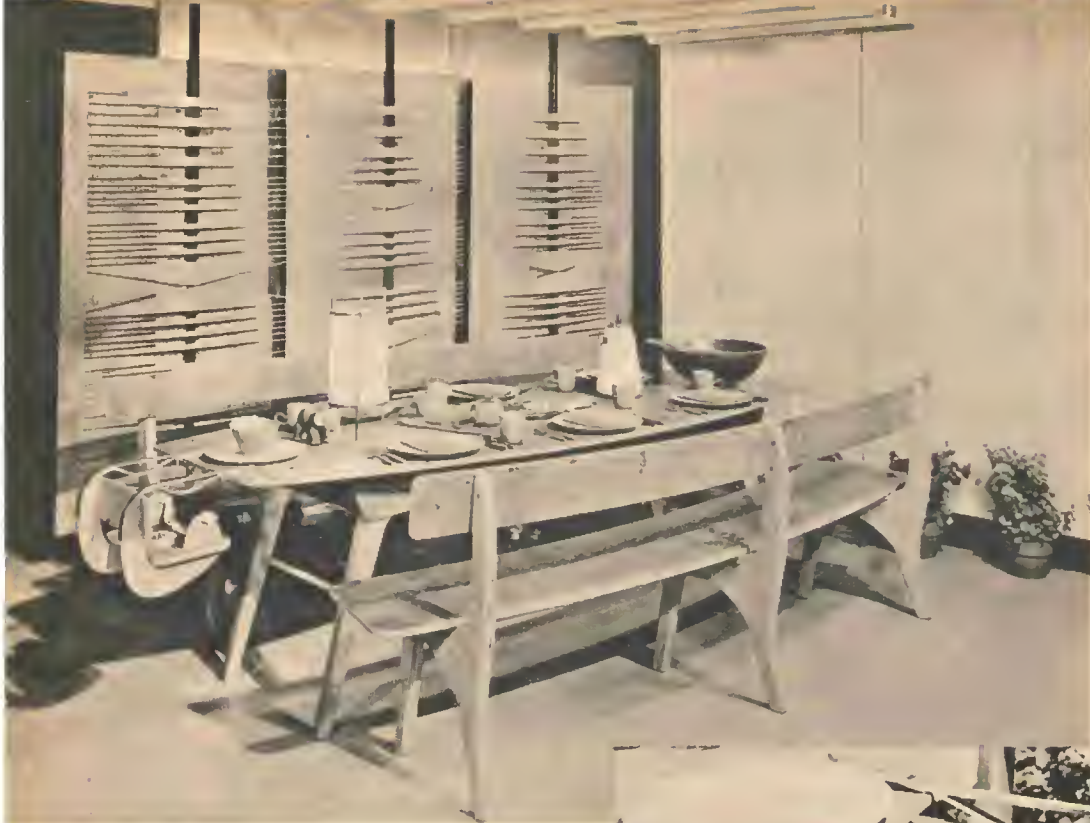


PARTS SCHEDULE

CODE	NO. REQ'D	SIZE	PART IDENTIFICATION
A	2	23 1/8" x 71"	Cabinet Top and Bottom
B	2	23 1/8" x 23 3/8"	Cabinet Sides
C	2	21" x 22 3/4"	Cabinet Divider
D	1	22 3/8" x 71"	Cabinet Back
E	6	19 1/2" x 22 1/4"	Box Bottom
F	6	9 1/2" x 22 1/4"	Box Back
G	12	9 1/2" x 20"	Box Sides
H	6	11 1/2" x 23 3/4"	Box Face
	16 Lin. Ft.	2" x 3"	Back Frame
	48 Lin. Ft.	1" x 2"	Drawer Guides
	36 Lin. Ft.	1/2" Quarter Round	Box Corners
	4 Ea.	1" Diam.	Connector Rings
	5 Lin. Ft.	1/8" x 1"	Steel Strap

Miscellaneous—1/8" Wire Cable and Winch, Pulleys and Screws, 4d and 6d Finish Nails, Waterproof Glue, Finishing Materials





OUTDOOR PROJECT No. 7

patio dining set



It has a removable chair for children, a charcoal brazier in the center

IF YOUR guests have trouble climbing over the seat of your old-fashioned patio picnic table, here's a graceful solution. Build this curved table and bench set.

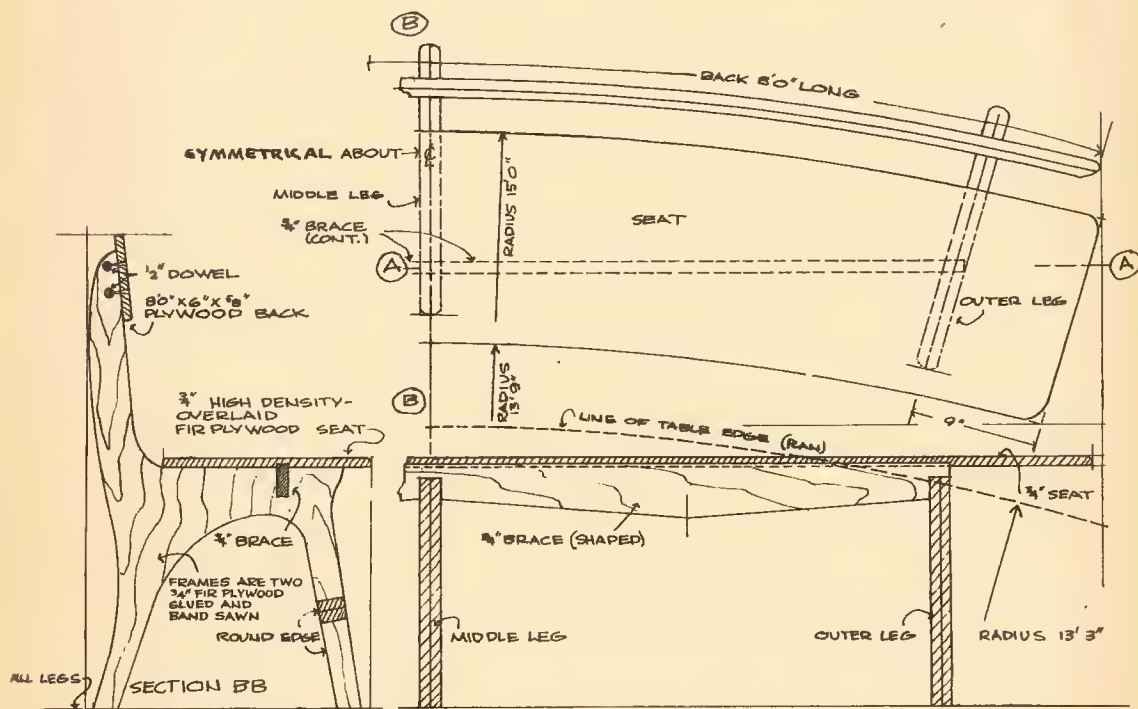
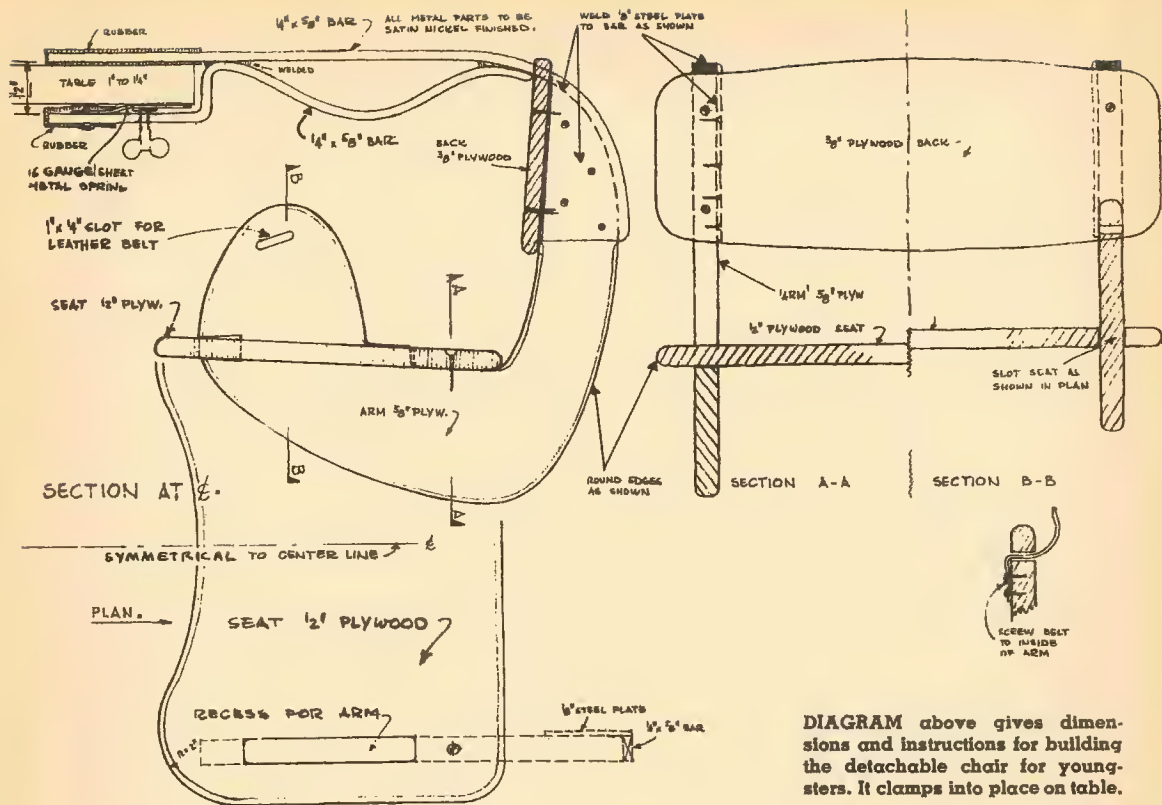
The table and benches have a premium quality look but their cost is moderate when high density overlaid fir plywood is used.

The bench frames and table legs are cut from two thicknesses of $\frac{3}{4}$ -inch thick high density overlaid fir plywood and laminated together. High density plywood is also used for the bench backs, seats, and table top.

The benches and table are eight feet long.

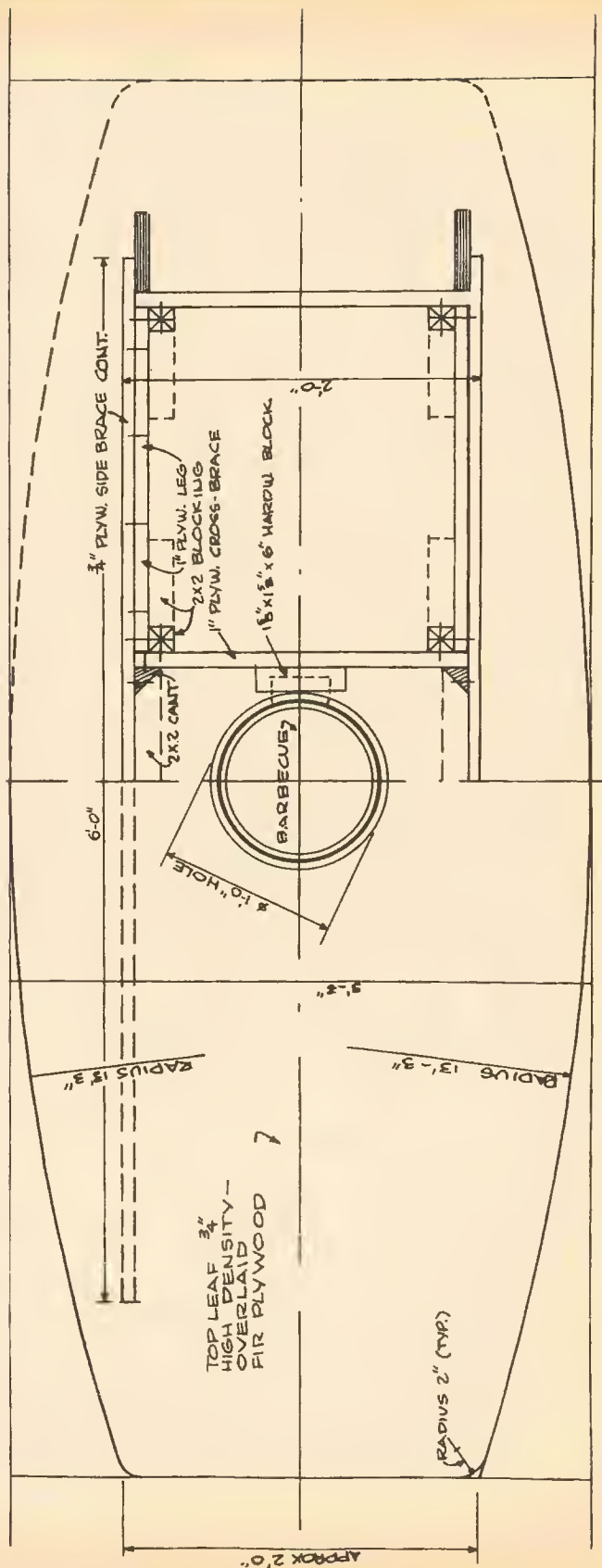
Six people can be seated on each bench with room to spare. A "plus" feature is a hole in the center of the table which holds a habachi charcoal brazier. With the habachi, foods can be kept hot or steaks grilled right at the table.

The benches conform to the curved edges of the table for a well-designed look. You can also make a detachable chair for a youngster which can be clamped to the end of the table. It is an ingenious combination of a metal framework with a plywood seat and back. •



BENCH DETAIL SCALE 3"=1'0"

DIAGRAM SHOWN HERE gives dimensions for table top. Highlight of this patio set is the habachi or charcoal brazier built into the center of the table for warming or even cooking simple dishes while the meal is in progress. (You can build the table without the brazier, however.) Table is made from high density resin overlaid fir plywood in a gray green color tone unpainted or finished in any way. The overlay is a hard, clear, glass-smooth, extremely abrasion resistant surface which is ideal for this application.



PLAN SCALE: 3" = 1'-0" NOTE: LEGS & BRACES TO BE ROYAL BLUE, STAIN GLAZED

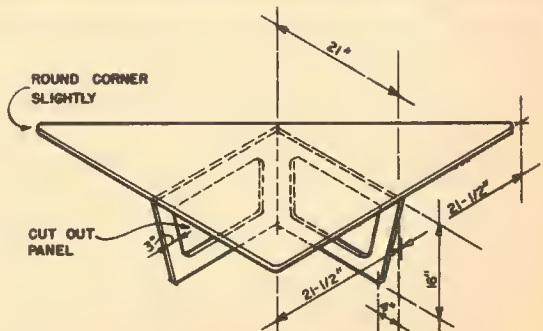
OUTDOOR PROJECT No. 8

sectional



ELEVATION

USE $\frac{3}{4}$ " PLYWOOD EXTERIOR A-C.
GLUE (WATERPROOF) PLY. PADS AND
NAIL WITH 6d FINISH NAILS.



ALTERNATE DESIGN USING PLYWOOD LEGS

patio tables

Their unconventional shape makes for interesting arrangements

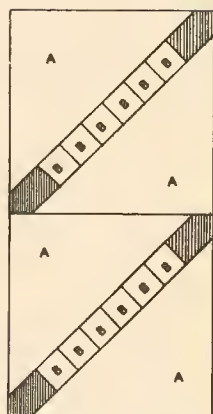
INTERESTING arrangements of these triangular tables are a natural result of their unconventional shape. Group two or more in various ways, or tuck only one in a hard-to-fit corner. Painted in brilliant, contrasting primary colors, they can brighten a terrace in fascinating ways. Construction is the ultimate in simplicity. The inexpensive hairpin legs shown are available everywhere and easy to install. Use only Exterior type fir plywood made with 100% waterproof glue and durable, high quality exterior paint or enamel.

Several tables can be stored in an out-of-the-way corner during the winter, as they can be stacked top up and top down, one above the other. But the chances are that you'll want to use them indoors, too, once you build them. •

PARTS SCHEDULE FOR TWO PATIO TABLES

CODE	NO. REQ'D	SIZE	PART IDENTIFICATION
A	2	43" x 43"	Top of Tables
B	6	7" x 7"	Pads for Legs
	6 ea.	3/8" Diam.	Wrought Iron Legs

MISCELLANEOUS: Waterproof Glue
Screws as Required



3/4"x4'-0"x8'-0" EXTERIOR A-C
CUTTING DIAGRAM
(4 PATIO TABLES)

PLAN

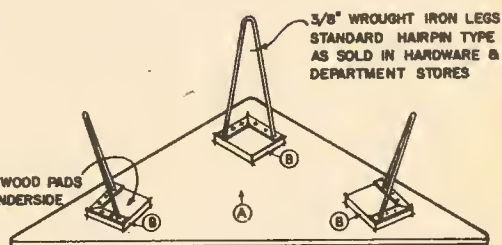
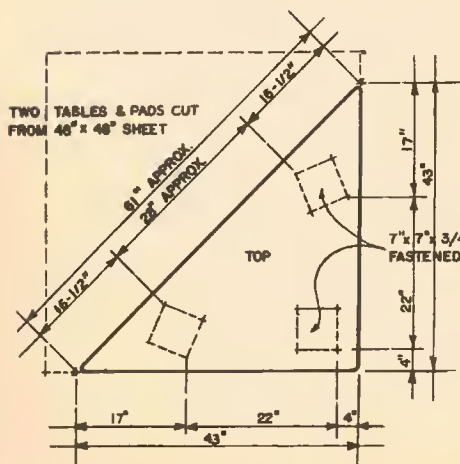


TABLE UPSIDE DOWN (SHOWING HOW LEGS ARE ATTACHED TO TABLE)

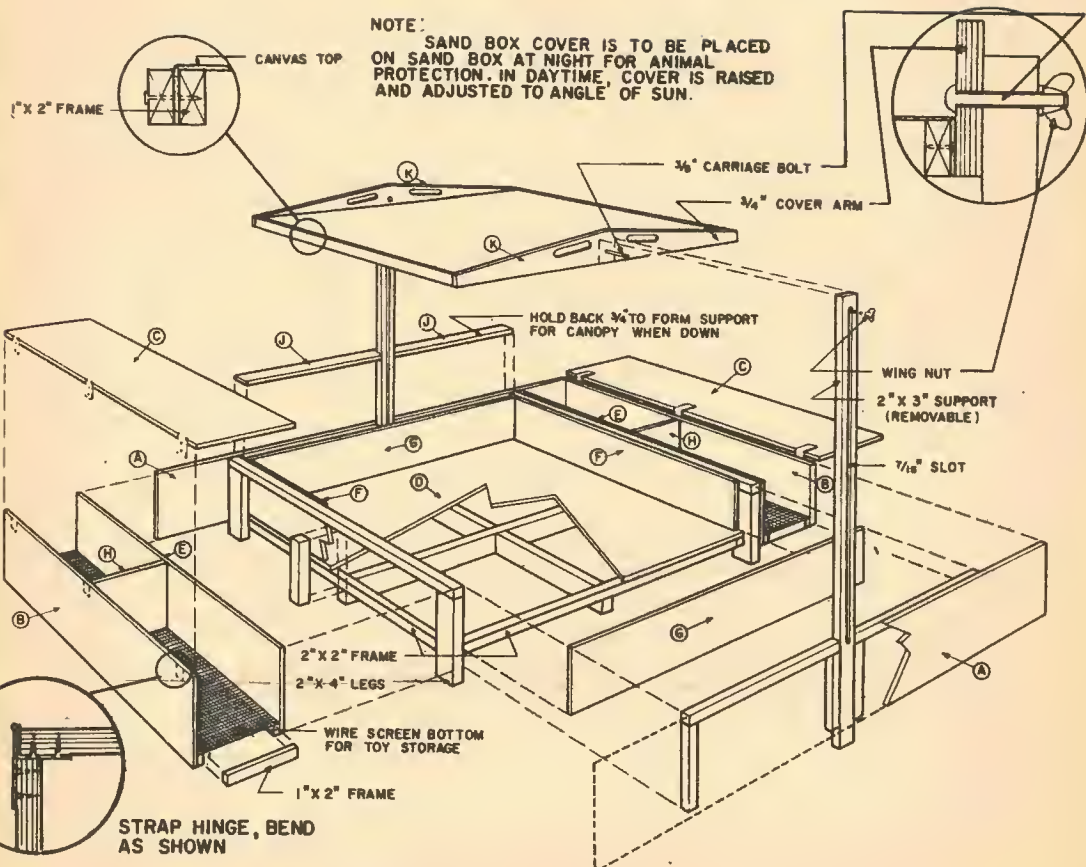


PARTS SCHEDULE

CODE	NO. REQ'D	SIZE	PART IDENTIFICATION
A	2	9 1/4" x 7 1/2"	Side
B	2	9 1/4" x 46 1/4"	End
C	2	11 1/8" x 47 3/4"	Door
D	1	43" x 48"	Bottom
E	2	9 1/4" x 46 1/4"	Side—Toy Storage
F	2	6 7/8" x 41 1/2"	End—Sand Box
G	2	6 7/8" x 48"	Side—Sand Box
H	2	7 5/8" x 8 7/8"	Divider—Toy Storage
J	4	2 3/4" x 23 7/8"	Trim—Sand Box
K	2	See Det: "A"	Canopy Arm
	6 Ea.	—	Strap Hinges
	2 Ea.	3/8" Round	Carriage Bolts
	2 Ea.	—	Washers and Wing Nuts
	8 Sq. Ft.	1/4" x 1/4"	Wire Screen
	4 Lin. Ft.	2" x 4"	Framing
	50 Lin. Ft.	2" x 2"	Framing
	45 Lin. Ft.	1" x 2"	Canopy & Toy Storage Frame
	12 Lin. Ft.	2" x 3"	Canopy Support

Miscellaneous—4d and 6d Finish Nails (Galvanized)
Waterproof Glue

NOTE: SAND BOX COVER IS TO BE PLACED ON SAND BOX AT NIGHT FOR ANIMAL PROTECTION. IN DAYTIME, COVER IS RAISED AND ADJUSTED TO ANGLE OF SUN.



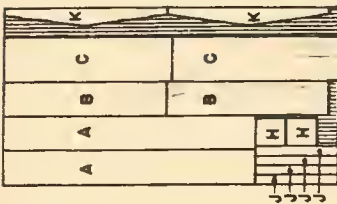
kid's sandbox

You'll have as much fun building it as the kids will have playing in it

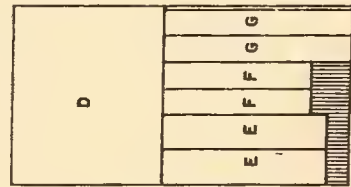
BY DELIGHTING the youngsters, frustrating night-prowling cats and dogs and helping mother keep sandpile toys accumulated, this design performs triple duty.

To build it, cut all plywood and framing members to exact size. Use only plywood made with 100% waterproof glue. Few edges of plywood show, so little sanding is required. Assemble with screws or nails; if joints also are glued, use waterproof type glue.

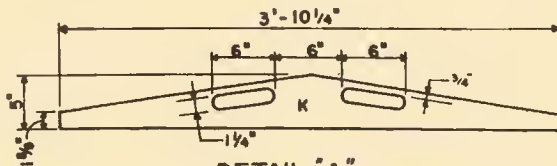
Attach underside framing to the bottom, then ends "F" and sides "G" with the framing required for each. Assemble two toy storage boxes before installing in place with sides "A." Attach trim and hinged lids, and paint. Stretch canvas top and install. •



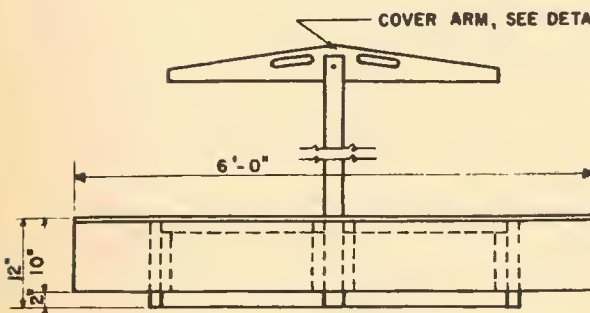
$\frac{3}{4}$ " x 4'-0" x 4'-0" EXTERIOR A-C



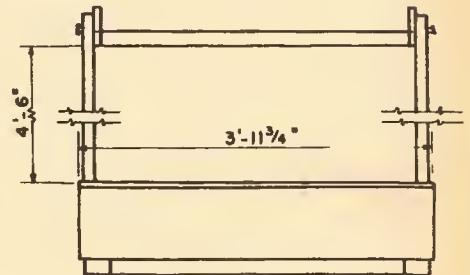
$\frac{3}{4}$ " x 4'-0" x 8'-0" EXTERIOR A-C



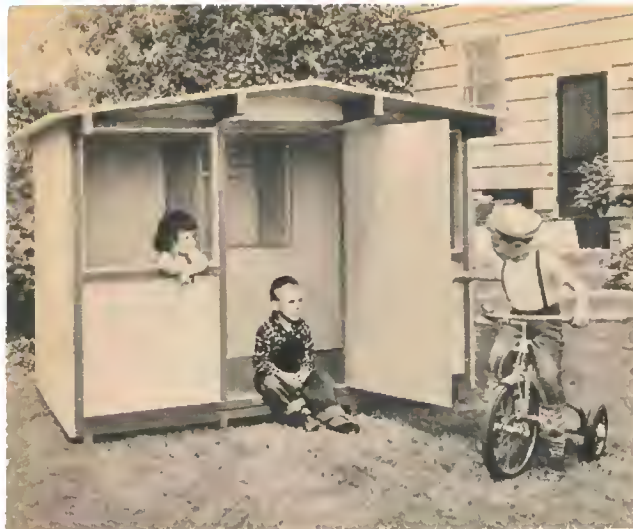
DETAIL "A"



SIDE ELEVATION



END ELEVATION



OUTDOOR PROJECT No. 10

kid's playhouse

It can double as storage
space in the wintertime

YOUNGSTERS won't want to wander if they have this attractive house to play in; they'll keep themselves occupied for hours.

Amazingly sturdy, it is easy to knock down and move. With panels added to the window openings, it provides ample winter storage for garden tools, lawn furniture and bulky summer sports equipment.

Construction is simplified by the prefab-

ricated panel sub-assemblies that make this playhouse so easy to erect.

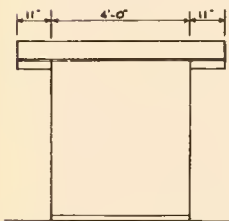
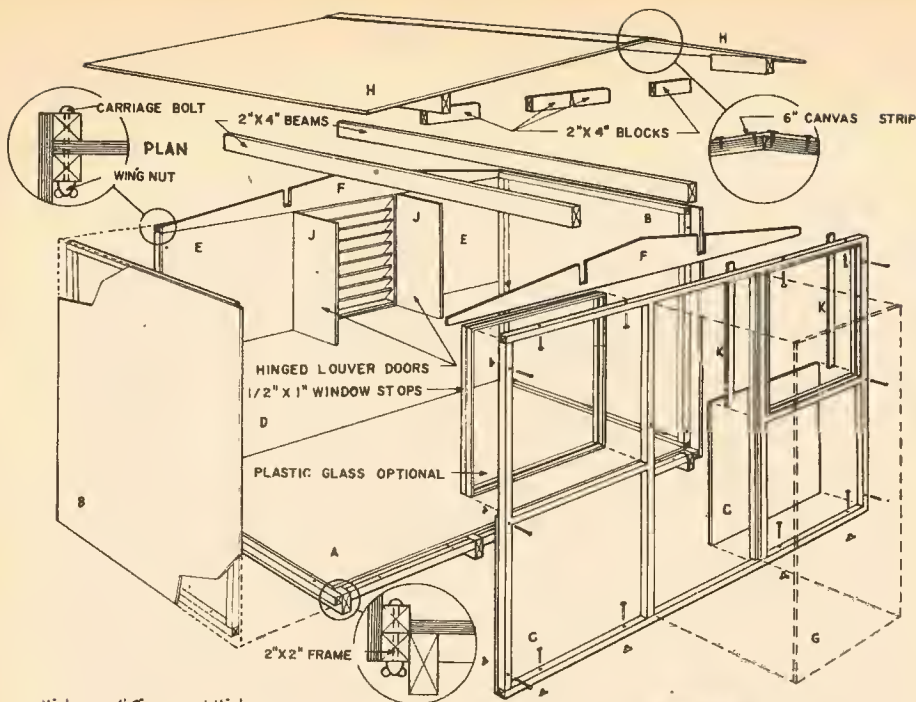
Fabricate all sections completely with nails and waterproof glue before assembling. Framing members may be pre-drilled for the bolts and wing nuts before fabricating, or may be drilled with the completed panels erected to insure matching hole locations. Study the diagrams for details. •

PARTS SCHEDULE

CODE	NO REQ'D	SIZE	PART IDENTIFICATION
A	1	$\frac{3}{4}$ "x43 $\frac{1}{2}$ "x81"	Floor
B	2	$\frac{1}{2}$ "x48"x48"	Side
C	2	24"x29"	Front Panel
D	1	24"x84"	Rear Panel
E	2	22 $\frac{3}{8}$ "x29"	Rear Panel
F	2	7 $\frac{1}{4}$ "x84"	Beam Support
G	1	$\frac{3}{4}$ "x25 $\frac{7}{8}$ "x23"	Door
H	2	$\frac{3}{4}$ "x48"x72"	Roof
J	2	13"x22 $\frac{3}{8}$ "	Louver Door
K	4	1 $\frac{5}{8}$ "x22 $\frac{3}{8}$ "	Casing
	32 Lin. Ft.	2"x4" Stock	Base and Beams
	122 Lin. Ft.	2"x2" Stock	Framing
	50 Lin. Ft.	$\frac{1}{2}$ "x1" Stock	Stops
	30 Lin. Ft.	$\frac{1}{2}$ "x2 $\frac{1}{2}$ " Stock	Louvers
	4 Ea.	For $\frac{1}{2}$ " Doors	Hinges
	2 Ea.	For $\frac{3}{4}$ " Doors	Hinges
	40 Ea.	$\frac{1}{4}$ " Stove	Wing Nuts and Bolts
	2 Pcs.	22 $\frac{3}{8}$ "x25 $\frac{1}{4}$ "	Clear Plastic Sheets*
	1 Pc.	6"x72"	Canvas Strip

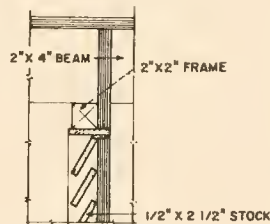
Miscellaneous—8d Common and 6d Finish Nails (Galvanized)

*Optional

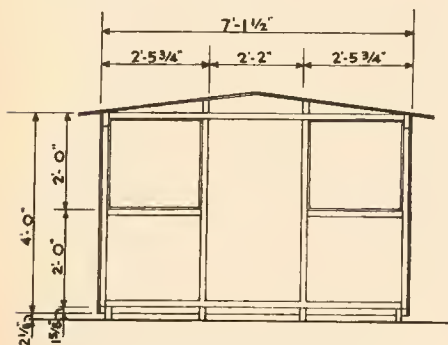


SIDE ELEVATION

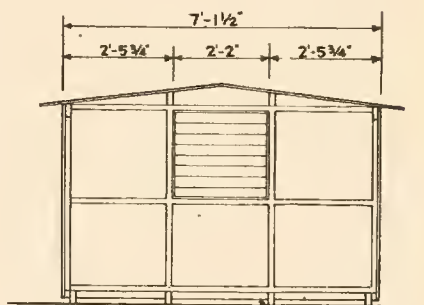
USE EXTERIOR A-C FIR PLY-WOOD ONLY.
NO CUTTING DIAGRAM
NEEDED FOR PARTS "A", "B",
"H," AND "G"



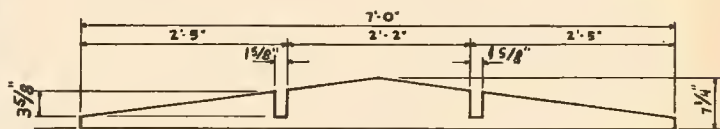
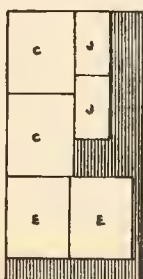
LOUVER DETAIL



FRONT ELEVATION



REAR ELEVATION



DETAIL: PART "F"



OUTDOOR PROJECT No. 11

camp trailer

It has all the conveniences any camper could desire

DO you like to go camping with your wife and kids? Or maybe you're the fellow who likes to go hunting or fishing? If you are like many others the expense of renting a camp or bungalow often makes this outdoor pleasure prohibitive. In that case you should appreciate this easy-to-build plywood camp trailer.

It really isn't a large trailer; in fact it is smaller than the average car. Yet it has all the camping conveniences any camper would need. It is large enough for the whole family to sleep in. It has a built-in kitchen, complete with water supply, icebox, food compartment, table and chairs, stove and a clothes closet. The trailer is

10 feet long x 4 feet wide x 4 feet 10 inches high. It is a perfect trailer for a man who wants to travel, or hunt and go fishing in.

The trailer body is constructed entirely out of wood—plywood sides with hardwood framing. It has traveled over 20,000 miles in the last couple of years, and it is just as sturdy now as the day it was built.

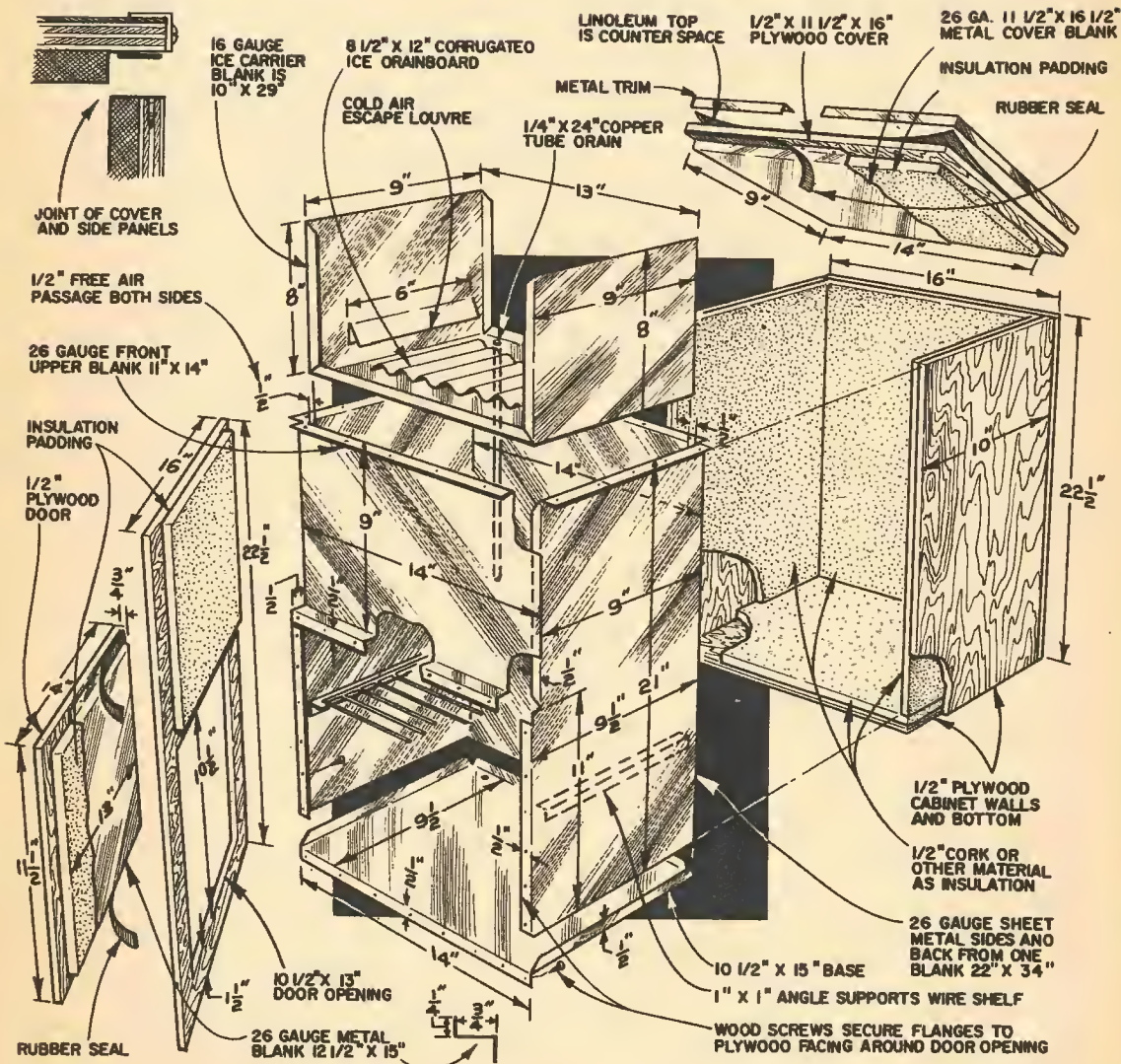
Start construction with the axle and wheel assembly. The I beam should be 56 inches long, and be sure the ends are square. Take two uprights, 1x4x11-inch steel plate, and the two spindles that fit the trailer wheels and trim them down to 11 inches.

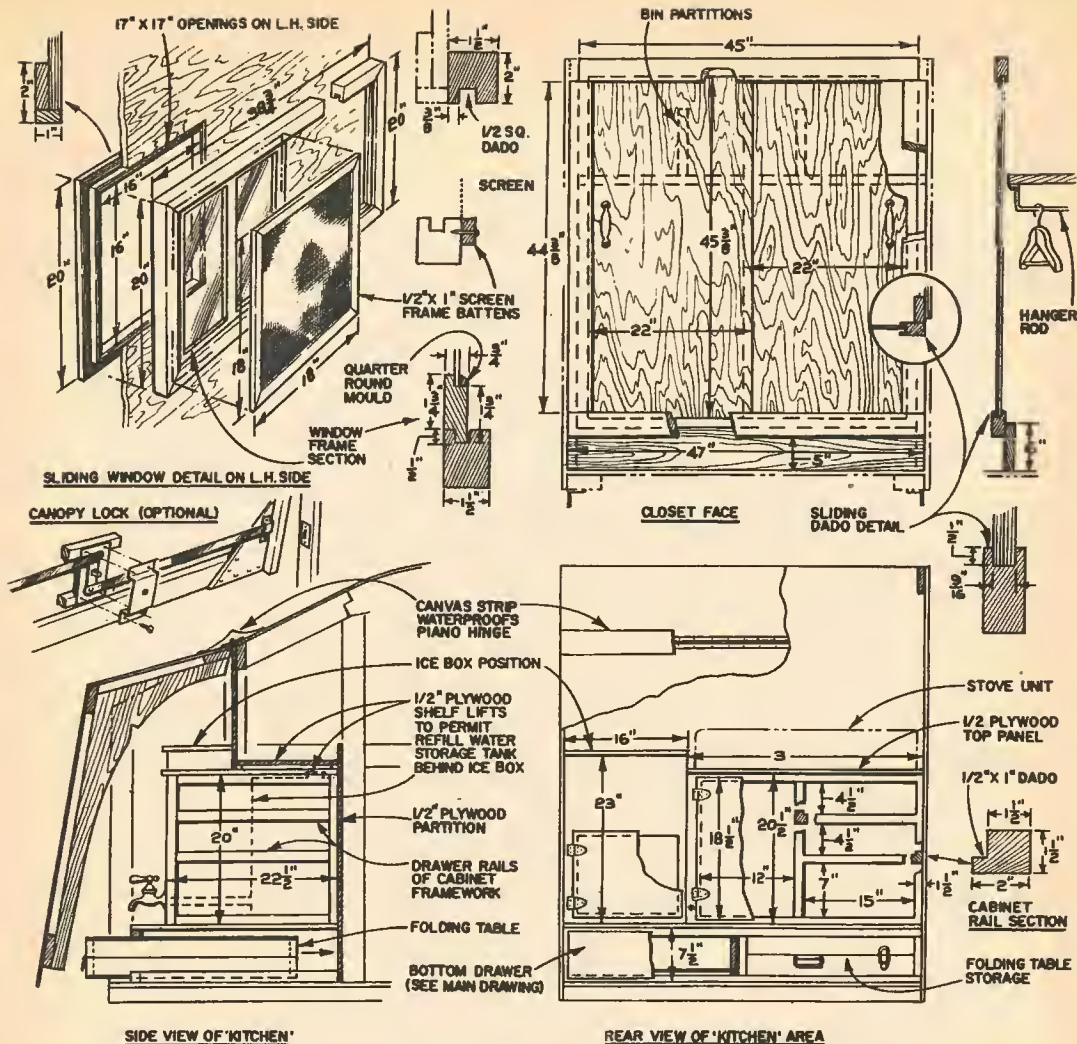
On the I beam measure in on each end

INTERIOR VIEW of camp trailer shows the clothes closet, entrance door, and the left side window.

COMPACT ARRANGEMENT of kitchen area shows stove, icebox, water tap, storage drawers, etc.







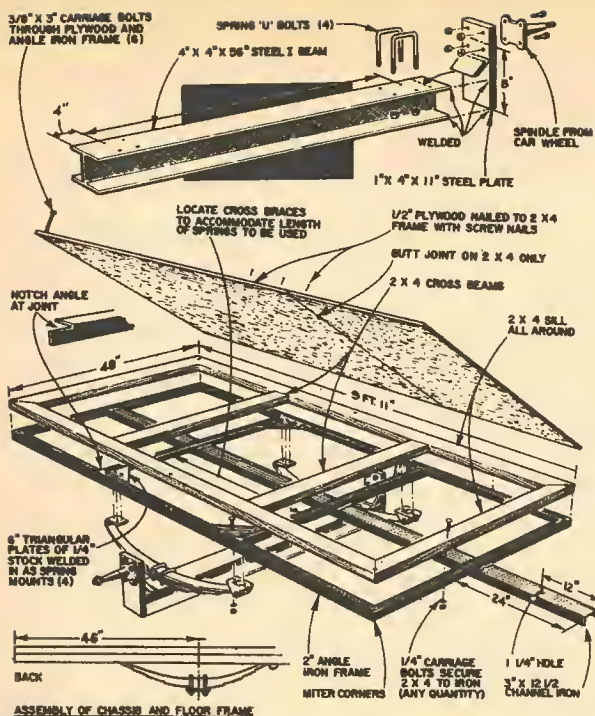
bility. Corners of the frame are cut at a 45 degree angle and welded as shown in the drawings. The crosspieces are butt welded in place. Their location is determined by the length of the car springs used for the trailer.

After the crosspieces are butt welded into place, the 6-inch triangular plates are clamped inside the angle formed by the crosspieces and the angle iron sides. The triangular plates are then welded into place. These plates go where the spring mounts are to be bolted. Set the springs into place and mark and drill the mounting holes on the plates. Now, take the 3-inch channel iron and weld it directly in the center of the frame. Measure back from the end of the tongue a distance of 12 inches and with your torch burn a 1 1/4-inch hole in the center of the channel iron.

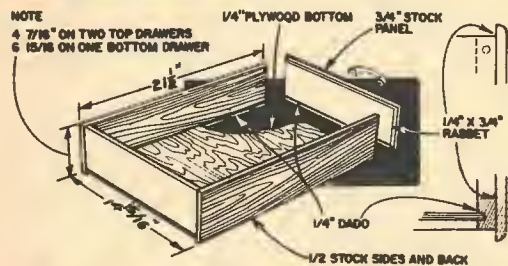
This is where your trailer jack will go.

Drill the holes that will hold the 2x4 hardwood frame to the angle iron trailer frame. With a power drill, drill a number of 7/16-inch holes through the angle iron frame; this also includes the two crosspieces. The holes can be drilled about 18 to 24 inches apart. You now have the frame ready for the hardwood frame and plywood bed. The corners of the hardwood sides and ends are cut at 45 degrees. These pieces are then clamped on to the frame for a good, even fit.

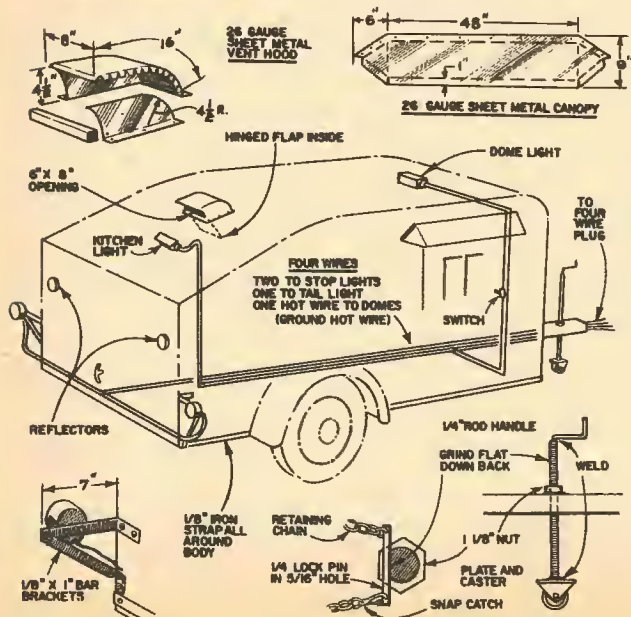
After the plywood floor is cut and attached to the frame paste the linoleum piece down on the plywood bed. The linoleum doesn't necessarily have to be a new piece as it is used for damp proofing the trailer and makes cleaning and scrubbing the bed a simple matter. The



ASSEMBLY OF CHASSIS AND FLOOR FRAME



CABINET DRAWER CONSTRUCTION (MAKE THREE)



wheels can now be put on the trailer bed.

The trailer jack is next. Secure the $1\frac{1}{8}$ x 18-inch long bolt; mill or grind a $\frac{7}{8}$ -inch flat on the entire length of one side of it. This flat face is for locking the jack in place so that it will not unscrew while the trailer is in motion; see detail drawing for correct procedure.

The jack dolly can be secured through your hardware dealer. It is welded to the end of the bolt. Take the $1\frac{1}{8}$ -inch nut and drill a hole through it as shown. The hole is to be large enough to receive the $\frac{1}{4}$ -inch locking pin.

Screw the bolt into the nut so that the dolly rests on the floor. When you are satisfied with the way it sets take the $\frac{1}{4}$ -inch rod and bend it into a crank and weld it to the top of the screw.

If you wish to buy the trailer jack you will find one at your local hardware store. That also goes for the trailer hitch, as it is best to buy a hitch and be on the safe side.

The two pieces of 1-inch chain are welded about 3 inches from the end of the tongue, one on each side of the channel iron; the ends of these chains are to be fastened to the back bumper of the car. A heavy duty chain snap is welded to the end of each chain. If you do not have the right type of back bumper it would be a good idea to fasten heavy duty eyes to clamp the chain snaps to. This is very important because if the trailer hitch happens to come loose while you are traveling the safety chains will hold it in place.

The easiest way to construct the trailer cabin is to lay out the plywood sides and cut them to the desired shape. After this is done the 1x3-inch hardwood frame can be laid out and cut to fit the sides. Follow the drawings for dimensions and details.

Build the clothes closet next. This can be constructed as shown, or to suit your individual requirements.

When building the kitchen

partitions be sure to measure each piece's location before you cut it to size.

You will note that the four sides of the icebox are 22½ inches high, front and back are 16 inches wide; the top sides 10 inches wide. Before nailing the front on, lay out the food compartment door and cut it out. Do not nail in the plywood bottom until the sheet metal core and bottom insulation is installed.

Lay out the icebox sheet metal piece for the back and top sides. When you have this piece cut and bent as shown, the rest of the pieces will not give you any serious trouble. The upper front piece is cut and soldered in place. Be sure that the entire length of each joint is soldered. Next, the bottom is cut and soldered into place.

Ice Compartment

The ice compartment is built last. It is made from a piece of 16-gauge sheet metal. This is a heavier gauge as the ice will set here and it will be subject to some sliding around while the trailer is in motion.

The 8½x12-inch piece of corrugated metal is placed on the bottom of the ice compartment; the cake of ice will rest on this. Since the metal is corrugated it will provide an easy escape for the melted ice water, also keep the drain from being covered over and trapping the water. You can now solder the copper tubing in place allowing it to stick out a couple of inches through the bottom of the icebox.

Depending on the kind of material you use, you may find it easier to install the

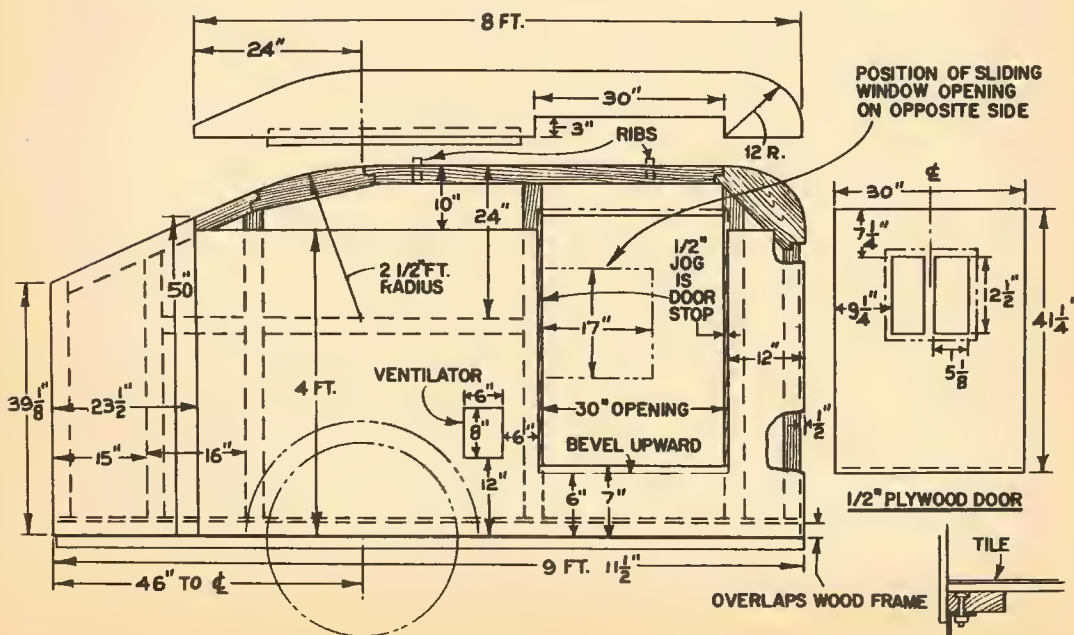
core in the wood shell first and then put in the insulating material.

Cut and bend the sheet metal of the icebox door as shown. For insulating cork or some similar material can be used. Fasten the sheet metal with small wood screws; the rubber seal is either glued or nailed into place.

Before cutting the above pieces to size, set the icebox on the kitchen cabinet base on the left side and snug against the trailer side. This is a temporary set up only for measuring purposes. The distance should be 31 inches from the right side of the trailer to icebox. This is the space that the kitchen cabinet is to occupy. If the distance is other than 31 inches then you must cut the kitchen cabinet pieces accordingly. The height will not change.

The water tank goes behind the icebox. A tank of galvanized sheet metal of the right dimensions can either be made or purchased. At the base of the tank on the right side drill a ½-inch hole and solder a ½-inch piece of copper tubing. Make the tubing long enough to clear the edge of the kitchen base. The copper tubing is bent so that it will line up with the hole in the kitchen cabinet upright. Solder a threaded fitting to the end of the tubing and screw on the faucet.

After all parts of your trailer are constructed and installed, and the outside painted with a good outdoor paint, you will find that you have a really compact weekend trailer that will soon repay in pleasure the time and money spent on it. •



the pod

This dory is simplicity personified in both design and operation



THIS dory is a natural for the man who likes a bit of exercise and appreciates the simplicity and silence of a well-designed rowboat. A narrow bottom, tapered at both ends, enables her to slice through the water with a minimum of effort and flaring sides make her safe and dry in a chop.

Pod, with a beam of 52 inches, has an overall length of 15 feet, 5 inches and is 11 feet, 6 inches on the waterline. Three pieces of marine plywood make up the sides and bottom and no frames are required. This makes boatbuilding about as simple as it ever gets and the result is a light, clean hull with fewer places for rot to develop. However, for those who feel better with conventional framing, optional frames are included in the drawings.

In building Pod, the first step is the construction of a building frame. Two sawhorses, about 5 feet long and 2 feet high,

are set up 9 feet apart. Two 2x6's, 16 feet long, are set on edge spanning the horses. These strongbacks are made parallel and level with 36 inches between the inside faces. They are also notched to fit the sawhorses and spiked in place.

Add Mold Anchors

Next the mold anchors are added. First locate station "A" over one of the sawhorses and mark this and the other stations on the upper edges of the strongbacks. A length of 2x4, at right angles to the strongbacks, serves as a mold anchor at each station. Each mold anchor is placed on the amidships side of the station with its edge coinciding with the station line. Spikes and diagonal braces hold them in place. Our draftsman, able fellow though he is, made a slight error in showing the location of these mold anchors. We, in turn, did not catch it until it was too late to change the draw-

ing. However, the stations are located correctly and everything will be fine if you move the forward and aft mold anchors toward the bow and stern respectively so that their edges coincide with the station lines. This, of course, changes the location of each mold so that its amidships side also coincides with the station line.

The molds themselves can be made from any 1-inch lumber that is strong and true. Lay them out full size on paper, then transfer the lines to the wood and cut them out and assemble them. Each mold is fastened to its corresponding anchor with $\frac{1}{4}$ -inch lag screws and the upper edge of the anchor determines the base line. Make sure each one is vertical and that its centerline coincides with the centerline of the complete building frame; then bevel the edges to take the planking.

Basic Points

Before going ahead with instructions for assembling the hull, let's get clear on some basic points: Each piece of wood going into the hull is to be treated with wood preservative before assembly; all screws are flathead brass wood screws driven in at right angles to the surface of the wood unless otherwise noted; the screws must also be countersunk $\frac{1}{16}$ inch unless the heads fall in plywood, in which case we reduce the depth to $\frac{1}{32}$ inch.

We are now ready to prepare and attach the sides. Lay them out on the $\frac{1}{4}$ -inch plywood sheet and cut them out with a sharp, fine-toothed saw to avoid splintering the edges. Reference points are then marked on each side as indicated in the drawing. Then clamp the sides over the molds with the reference points at station "B."

Fastening the chines to the side planks involves considerable bending so they are soaked with water as they are pulled into place. Be sure to let each chine overhang the plywood enough to allow for a bevel. Then hold them in place with clamps until you drive in $\frac{7}{8}$ -inch, No. 7 screws spaced 6 inches apart.

The stemson must be beveled to a proper fit. Pull in the sides and mark this bevel, then cut it as required. Also trim the chines to butt flush against the stemson. When the stemson has been fitted, fasten it in place with marine glue and $1\frac{1}{4}$ -inch, No. 8 screws spaced $1\frac{1}{2}$ inches apart, making sure it is in line with the centerline of the building frame.

Next make the transom. We built this up of pieces of oak which were doweled and glued, using a resorcin resin with catalyst.



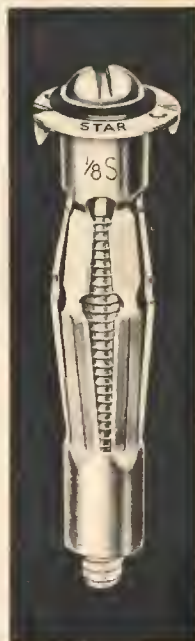
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Be sure to make allowances for the bevels as noted in the drawing. When the piece is complete, hold it in place on the building frame, pull in the sides and mark the bevel. After cutting this bevel, the transom frame is fitted. This frame is beveled to match the transom and notched to receive the chines. It is then glued and screwed in place with 1½-inch, No. 8 screws spaced 3 inches apart and offset in two rows. When this is done, you can place the transom assembly on the building frame for a final fitting and secure it with marine glue and 1¼-inch, No. 8 screws spaced 1½ inches apart and offset in two rows.

Plane Excess

The next step is to plane the excess material off the chines, stemson and transom assembly. Take a straightedge, place a level on top and slide it along the chines at right angles to the centerline of the hull. By watching the points of contact, you will be able to locate the high spots and trim them off. Then take the plywood sheet from which the bottom will be cut and lay it on the chines. There should be good contact throughout.

With the sheet resting on the chines, trace the outline of the bottom on it; then cut it to shape. Spread marine glue on the chines, place the bottom in position and fasten it with 1¼-inch, No. 8 screws spaced 3 inches apart. Screws near the transom must be driven in at an angle to be buried in the chine. Then shave the edges of the bottom flush with the sides. At this point the keel can be fastened in place with 1-inch, No. 8 screws spaced 8 inches apart and offset in two rows. Drive the screws through the bottom into the keel.

Install Spreaders

Now cut two temporary spreaders and install them between the sides at the sheer. Locate one 6 inches forward of station "B" and the other 6 inches aft of station "C." The hull can then be removed from the molds.

The seat risers are trimmed to fit flush against the stemson and transom frame. They are clamped in position and fastened with ⅞-inch, No. 7 screws spaced 6 inches apart and driven in from the outside through the planking. The top edges of the risers must be planed so that the seats lie flush on them.

After sanding and priming the hull, install the two thwarts. Allow very light contact between the ends of the thwarts and the side planks and fasten them to seat risers with three 1½-inch, No. 8 screws in

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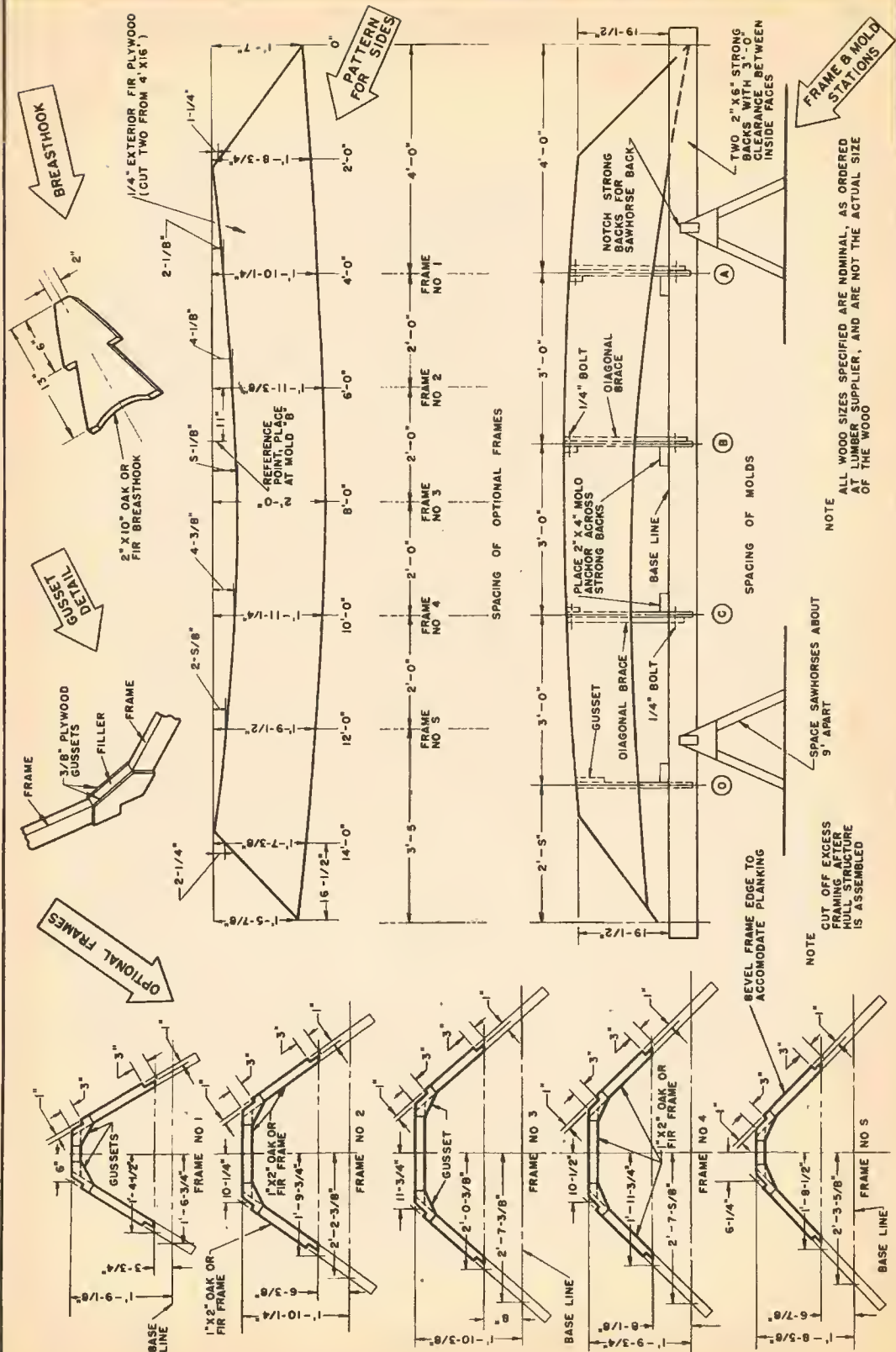
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each end. The temporary spreaders can now be removed.

The seat risers are notched to a depth of $\frac{3}{8}$ inch to take the strongbacks which help support the seats. The strongbacks are cut to fit into the notches flush with the tops of the risers and also beveled so that they fit snug when tapped into place. No fastenings are used between the strongbacks and the risers but the seats are secured to the risers and strongbacks with 1-inch, No. 8 screws spaced 9 inches apart. It is best to paint the undersides of the seats before installation.

Rabbet Gunwales

The gunwales are rabbeted $\frac{1}{4} \times 1$ inch to cover the edge of the plywood, then clamped in place on the side planks. Make sure the gunwale is at the right height to be faired into the transom, then drive in 2-inch, No. 10 screws horizontally through the gunwales into the transom. Screw the gunwales to the stemson temporarily so the clamps can be removed.

The ends of the inwales are cut to butt flush against the stemson. Clamp those ends into position, flush with the top of the gunwale and then work aft, clamping and screwing as you go. Use $1\frac{1}{4}$ -inch, No. 8 screws $\frac{3}{4}$ inch below the upper edge of the inwale and spaced 6 inches apart.

The after end is cut and beveled to fit flush against the transom proper, the transom frame being trimmed to just below the inwale.

Tap the gunwale along its full length with a mallet to make sure the plywood is seated in the rabbet and then drive in $1\frac{1}{4}$ -inch, No. 8 screws $\frac{1}{2}$ inch above the lower edge of the gunwale, spacing them 12 inches apart.

Trim Gunwales

Up at the stem, trim off the gunwales at the point where they converge naturally with a vertical cut at right angles to the hull centerline. Measure back along the centerline 6 inches and make a similar cut to a depth of about $1\frac{3}{4}$ inches. In determining the exact depth of cut, remember that the upper face of the breasthook will have to blend with both the inwale and gunwale and its lower face will have to blend with the gunwale. Next cut in from the apex of the stemson, parallel to the sheer and approximately $1\frac{3}{4}$ inches below it, over to the bottom of the vertical cut. Bevel the breasthook as required and screw it to the stemson with two 3-inch, No. 14 screws. Also drive two of the same screws through the gunwale and inwale into the breast-

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THE TRANSOM of boat is installed. Marine glue and screws through the side planks secure it.



METHOD used to clamp seat risers is shown here. Note the temporary spreaders at the sheer.

hook. Next cut the forward edges of the side planks and keel flush with the leading edge of the stemson and then cut and bevel the cutwater and fasten it with 2-inch, No. 9 screws spaced 6 inches apart.

The transom block is fitted with the lower face flush with the lower edge of the inwale. Drive two 3-inch, No. 14 screws horizontally through the gunwale and inwale and into the block and four of the same screws horizontally through the transom and into the block.

Finally, shave off all excess material so that the entire hull is trim and smooth. Putty over all screw heads, sand the hull down and paint it. Every surface should have three coats of marine paint, sanded lightly between coats. •

STARTING at the stem and working aft, the in-wales are clamped and then screwed into place.



MATERIALS NEEDED

QUANTITY	SIZE	USE
EXTERIOR FIR PLYWOOD		
1 piece	1/2"x4'x16'	Side planks
1 piece	3/4"x4'x12'	Bottom plank, stern seat and bow seat.
CLEAR, EDGE GRAIN FIR		
2 pieces	1"x2"x12'	Chines
2 pieces	1"x2"x14'	Seat risers
2 pieces	1"x2"x16'	Gunwale
2 pieces	1"x3"x16'	Inwales
1 piece	1"x3"x12'	Keel
OAK OR FIR		
1 piece	2 1/4"x3 1/4"x3'	Stemson
1 piece	1 1/4"x1 1/4"x3'	Cutwater
1 piece	2"x10"x14"	Breasthook
1 piece	1"x8"x8"	Transom
1 piece	1"x3"x5"	Transom frames
1 piece	1"x6"x30"	Transom block
FASTENINGS		
2 gross	1 1/4", No. 8	FH brass wood screws
1 gross	7/8", No. 7	FH brass wood screws
4 dozen	1", No. 8	FH brass wood screws
3 dozen	1 1/2", No. 8	FH brass wood screws
1 1/2 dozen	3", No. 14	FH brass wood screws
1 dozen	2", No. 9	FH brass wood screws

THE POD has beautiful lines and moves along with very little effort on the part of the oarsman.





BEAUTIFUL...

THE BABY DOLL MURDERS

by James O. Causey. She could look like a wistful child and she loved to play games — such as murder, men and marijuana. One day soon she would play too hard and a bullet would be the only way to stop her. GM No. 698.

YOUNG...

THE CASE OF THE BEAUTIFUL BODY

by Jonathan Craig. The murder was a shocking one — the girl was so young and so lovely. A needless crime, the police thought, until they started some routine questioning of her friends—her happy and relieved friends. GM No. 702.

RUTHLESS...

THE VODOO MURDERS

by Mike Avallone. The drums throbbed and the golden girl rose to her feet and moaned and swayed to the wild jungle rhythm. She would have danced all night if Death hadn't been her partner. GM No. 703.

GREEDY...

RUN FROM THE HUNTER

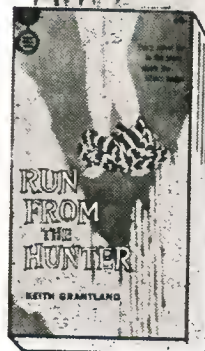
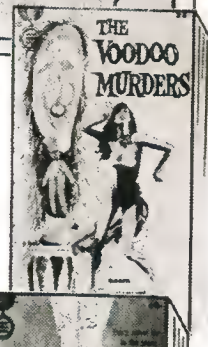
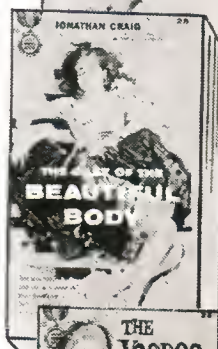
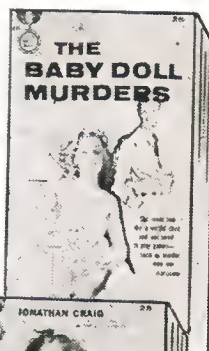
by Keith Grantland. She was the most beautiful girl the police lieutenant had ever seen. Then why had someone, someone who knew her well enough to have a key to her apartment, killed her in such a brutal way? GM No. 701.

and **MURDERED!**

Their friends drank a toast to Death
and thanked him for a job well done...

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